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FOMRHI Quarterly

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FELLOWSHIP OF MAKERS AND RESEARCHERS OF HISTORICAL INSTRUMENTS

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FELLOWSHIP of MAKERS and RESEARCHERS of HISTORICAL INSTRUMENTS

Bulletin 34

January, 1984

We begin, as has now become traditional, by wishing slightly over 50% of the membership a very happy and prosperous new year. The other 45% or so will, in due course, receive these greetings, but only after being sent a reminder (for the information of those of you who always pay up promptly, they get the title page and contents of this Q with a note on the bottom to say that this is what they would have received if they'd paid their sub). Our new year greetings to them are slightly less warm than those to you, because they involve us (why do I say 'us'? It's Margaret who has to do the work) in more work (ie time taken off Margaret's own work) and also in considerable expense.

Although we've just put up the rates, we do do our best to keep costs down, and perhaps it's for that reason that I, at least, resent any unnecessary expenses. A reminder has to be printed (a few pence), put into an envelope (a few more pence), and then posted (up to six shillings in old money, a horrifying figure to those of us who remember letters going for 2½d). Some other societies make an extra charge for late renewals; we've never done so, but I've often been tempted to suggest it. Perhaps I could ask those of you who have received this late, because you've had to be reminded, to bear in mind for the future that between 25 and 50p of your subscription has been wasted in this way, and that, if we were to budget more strictly than we do, the Qs for this year would be a few pages shorter than they might be, simply because of that extra expense.

DONATIONS: After a grouse, praise and thanks. Many of you have added an extra donation to your subscriptions to cover the costs of sending FoMRHIQ to people in countries which do not permit money to be sent abroad, and some of you pay the whole costs of such subscriptions. We are very grateful to you, and the recipients are even more grateful. You have been so generous that I think we can afford a few more such seminar members (we call them that because, when we held a 16th century seminar some years ago in London, we made a profit, and this was what we used that profit for, to start this scheme). You know as well as I do which countries are difficult in this way. If you know of people who would be seriously interested in FoMRHIQ and would receive benefit from it, and, and this is really the most important thing, who would pass FoMRHIQ round rather than keeping it for themselves, then do please let me know. Obviously the first choices would be members in places where we have none at the moment, and thus where it would be most useful. Also (there's no harm in a little self-interest) in places where there is material of interest to us, which perhaps they'd write up for us and where a friendly contact would be useful. The main purpose of this scheme, though, is to spread information and to help colleagues who would otherwise find it difficult to acquire the sort of information that appears in our Qs.

FINANCE: Margaret has told me that a fair number of you have been unduly optimistic of the strength of your own currencies (or pessimistic about ours). For example, those who sent \$9.00 have wound up paying less than the sub, once the bank has had its bite (can't call it a nibble any more). I will try to remind you next October, but in case I forget, please try to remember that what counts is the exchange rate in London, not where you live, and that it bounces up and down every day. Please play safe in your calculations; a few pennies or whatever at your end, adds up to pounds when it's a number of members at this end.

ORGANISATION: Please try to remember that FoMRHI and the Bate Collection are not interchangeable. They may be intertwined, but they do not share bank accounts, for instance, and if you try to pay for Bate plans and FoMRHI subs on the same cheque, it makes for considerable complications if the cheque is to FoMRHI, and for total impossibility if it's to the Bate (I sent back a couple of renewals the other day which were made out to the Music Faculty; no way could we get the money transferred to FoMRHI).

RECRUITMENT: John Hanchet suggested that FoMRHI would benefit if members who were exhibiting at such places as Boston, Hoerne, Bruges, etc would be willing to have FoMRHI membership forms on their stands (and perhaps have a few of their won recent Qs available to show any interested people). I can always provide sets of bumf, or if you've got your own photocopy facility a master set, for anyone willing to do this; it only needs one, really, at each such exhibition. We have sometimes been asked to advertise in the exhibition brochure. I've always refused because I've never seen that the expense was justified to FoMRHI. The new member benefits, of course, (we hope anyway) but FoMRHI itself doesn't. It would mean spending between 6 and 10 of your subscriptions (prices vary from one to another), and this is not what six or ten of you subscribe for.

BACK ISSUES: I have said this before, but enough queries suggest that it's time I said it again. The out-of-print Qs (numbers 1-11) are no longer available because nobody has ever offered to be responsible for making and issuing one-off photo-copies as they are ordered. I thought that I could do it here, but there simply isn't the time to stand over the photocopier in the office and do it (and it gums up the machine which all my colleagues are using too). We have had one or two offers to do the job, but I have never managed to get the concrete figures necessary: the cost per page and the postal rates home and abroad, surface and air, including costs of envelopes and so forth. Some of us are happy with the present situation; some authors would prefer their earlier Comms to remain unobtainable. Others feel (the majority of the Fellows, in fact, last time this was discussed) that everything should be available. So we are open to offers to do the job. I warn you that it is quite a heavy one; orders come from all over (so you've got to be able to convert currency). I can supply masters made up in FoMRHI pages (ie p.1 and p.54 or whichever on the same A4 sheet). These can then be copied double-sided and stapled up as Qs (it saves a lot of money if whoever is doing it can collate and staple; firms charge a disproportionate amount for doing those jobs; if not, those costs have to be written in as well). And the whole thing is really only practicable if someone has access to a cheap photo-copying facility; commercial rates push the costs up higher than most people will pay. Q33, for example, would cost £2.40 plus collating and stapling, plus envelope, plus postage, plus currency exchange costs; by the time you've finished, most of last year's sub for the one issue.

So for the moment 1-11 remain unavailable. If there's any change, I'll let you know.

FORMAT: Many of you have said, while renewing, that you'd prefer the Format to remain as it is. Good; so would I! Yet another journal (AMIS) has just changed format; the result: some issues on one shelf and now some on another, and thus continual annoyance to the subscriber. Margaret says that at least three-quarters of you are happy with the present size and style. Perhaps I may quote from one (such comments are an encouragement to us, and perhaps one at least should be on record). Arthur Marshall wrote: "Qs and Membership lists are much appreciated in their present form. I can only apologise for

lack of contributions but suspect that I am one of a number of members who has little basic musical knowledge and not much expertise in the making aspects. Since its formation FoMRHI has done a lot to help bridge the gap between the raw amateur and the erudite articles of the formal journals. Also the membership lists have enabled me to become acquainted with a number of people with Early Music interests to our common benefit." Thank you, Arthur.

LOST MEMBERS: The October Qs have come back marked 'gone away' and 'address changed' for Ann Farquharson (late of Blenheim Crescent, London W11) and André Verhoog (late of Henkelem, Netherlands). If any of you can give me a current address for either, I'll send them again, or if you're in touch with either, perhaps you'd tell them the new subscription rates, and then they can renew and ask for their October Q at the same time, and thus save postage.

OBITUARY: To my shame, I forgot to say in October that Lyndesay G. Langwill had died. He was a FoMRHI member for only a short time (we were not really in his line, and I was surprised that he joined at all, but we'd been friends for a long time, which may have been part of the reason). We all owe him a great deal of thanks. He was a founder member of the Galpin Society, and had it not been for the Galpin Society none of the organisations like us or the journals like Early Music would ever have come into being; he was its Honorary Treasurer for over twenty years (for the benefit of non-English members, Honorary means that you do it in your spare time, unpaid, though reimbursed for some, anyway, of your actual expenses, just to help other people); he wrote a number of important articles and books. Above all, for the wind-oriented among us, he compiled our bible. The formal title is 'An Index of Musical Wind-Instrument Makers' but those of us who knew him say 'I'll look it up in Lyndesay' and those of us who didn't say 'I'll look it up in Langwill'. Few have achieved so much that their names are used in such a way; I can think of Grove (whose achievement was such that his successors, though known, are all-but unthought of), Scholes, Vannes, Boalch, and a few others, but not many. He put the Index through six editions (and was always ready to answer queries personally), and I am glad to say (see Comm.421 in Q 28) that the Index, still known as Langwill, will continue. In Lyndesay's case, the good that he has done will long live after him.

One of our Dutch members has died, also, Wouter van Helmond. He came from the country which is, in proportion to population, the most interested and enthusiastic in our field and, today, the leaders in the performance of early music on the original instruments.

FURTHER TO: Bob Barclay writes: "I just received the latest Bulletin and note the use of the word 'conservationists' in place of 'conservators' in Eph Segerman's article." In a quick run through Eph's Comms in Qs 32 and 33, I couldn't spot the word, hence the lack of a reference, but perhaps it's worth pointing out that conservators is what those engaged in conservation call themselves.

Comm.478: Pat McNulty writes: "I must correct you, where you say the Introduction to Hugh Cheape's Check-List of the Bagpipes in the Edinburgh University Collection of Historic Musical Instruments 'sorts out a number of misconceptions, the most important perhaps that the instrument usually called the Uilleann pipes is a peculiarly Irish instrument'. The introduction does not say, or imply this; this form of bagpipe (Uilleann or Union) is indeed uniquely Irish, and in fact is regarded as the National Instrument of Ireland. The introduction mentions that various makers of the Uilleann pipes existed outside of Ireland in the 18th and 19th century and the various items in the collection may well (when studied and researched properly) give an

indication of the various stages of development of this, the most complex and sophisticated bagpipe in existence. We hope at some stage, incidentally, to fit reeds to many of these instruments to check their pitch, scale, etc and hopefully understand properly what the so-called 'Hybrid Union pipe chanter' really was, a term not really accurate or pleasant either. Whilst on the subject of Irish bagpipes, I hope to have news shortly of the formation, in Britain, of a Society for this instrument." jm adds: I think I remain unrepentant. It was never my intention to suggest that the Uilleann pipes were not Irish (nor, indeed, that they are the most sophisticated and in many respects the most beautiful of all bagpipes), but I still suspect that the existence of makers outside Ireland may suggest, to put it no higher, that they were also used outside Ireland. I find it difficult to believe that this was solely an export trade from Britain to Ireland, and I hope that Pat and others will eventually find evidence that not only did the Irish persuade Scots and others to make the instrument but that they also persuaded people in this larger island that the instrument was worth playing. We have lost all the English bagpipes but one, and the Scots have lost many of their own, all swept away by the Highland pipe (which has also done for the Breton and several Indian pipes, and probably more); if at any time the Irish persuaded the Scots to play the Uilleann pipes, I'd have thought that this was something to be proud of.

Comm.483: We have had two letters about Paul Gretton's review of Overton's Cornett book. One from a person called James Muir (I call him a person; only fellow-FoMRHI members are entitled to be as rude to me as he was, and he is clearly no gentleman); let it suffice that he didn't like the review - fair enough; Paul didn't like the book.

The second from Overton himself. This is a letter thirteen pages long. I replied to him that we would be glad to print his reply if he would send it prepared for press, but that as it was double-spaced and on an odd-sized paper (something between quarto and A4) with excessively wide margins, we could not print his letter as it stood (I don't mind 13 pages of reply, but not when they contain 5 or 6 pages of matter, and we haven't time to retype it for him). I also advised him (having had similar reviews written about my books in the past) that his reply would be more convincing, and more dignified, if he cut out the ruder personal remarks about Paul. Since then there has been no reply. He may have been away for Xmas, and it may yet arrive either just in time for this Q or for the next. If not, let the record stand that both he and Mr.Muir object to the review, and you, as readers, will have to decide for yourselves whether to believe Mr.Muir (and by implication and natural feeling Mr Overton) that the book is excellent, or Mr.Gretton that it is not. (see Postscript)

Bull.33, p.8: Jonathan Swayne writes (for future reference, would he and others please note that typescript on brown paper won't reproduce decently; I've therefore got to retype it): "With regard to the query about the Arion Micon tuner, I came across one in a music shop the other day. Not having any of my own instruments with me, I tried a modern flute on it. It was totally confused by the top octave, but otherwise seemed reasonable, though not very easy to read. There is another similar instrument by Boss (slightly more expensive), which is easier to read, but runs out upwards of d'''. The shop owner, who is an oboe specialist, also told me that the Arion tuner is confused by harmonic-rich notes. I have also tried the new Korg tuner which seems a much better proposition. It has a 7 octave range, in both listen and play modes. In listen mode, it will not only tell you what note you are playing and in what octave, but also give you the pitch \pm 50 cents on the meter. The internal pitch reference can also

be infinitely varied plus or minus 50 cents of 440Hz. Like the Arion and Boss, it does not have to be switched between notes; unlike the Arion and the Boss, it has more range, and does not seem to suffer the same confusion over harmonics, but I must admit I have not yet been able to give one the full treatment. The price seems to be around £90."

Daniel Bangham writes on the same point:

Following Bull. 3 p.11 and Bull. 33 p.7, John Paul v. electronic tuners, I have not had much success with the Arion Micon tuner with woodwind instruments so I would be interested to know how string players got on with it. The Arion Micon has the ability to 'tell you' what note you have played and then if it is in tune; it has a rather limited range (2 octaves). Unlike the Korg WT 12 or the Seiko ST 369 (TOLV) the Arion Micon does not have a speech facility. I would be happy to supply any FOMRHI subscriber with either an Arion or Seiko at a 20% discount (viz Arion Mica at £28.78 or Seiko at £66.00) and offer to loan John Paul or the writer of the article in Bull. 33:7, an Arion. Daniel Bangham, 1 Felton Street, Cambridge 64702. Tuner specifications are set out below.

■ SPECIFICATIONS

Tuning system: Automatic (Arion) / Manual (Seiko)
 Sound detection: Built-in condenser microphone
 Keynote indication: LED (Arion) / LED (Seiko)
 Tuning display: LCD (Arion) / LCD (Seiko)
 Tuning range: ±50 cents (Arion) / ±50 cents (Seiko)
 Tuning accuracy: ±1 cent (Arion) / ±1 cent (Seiko)
 Output jack: 6.3mm (Arion) / 6.3mm (Seiko)
 Illumination: LED (Arion) / LED (Seiko)
 Power Requirements: 1.5V x 4 (Arion) / 1.5V x 4 (Seiko)
 Dimensions: 165(W) x 70(H) x 35(D) mm (Arion) / 165(W) x 70(H) x 35(D) mm (Seiko)
 Weight: 300g (Arion) / 300g (Seiko)

		Compass	Number of steps	Selected by
Compass	Octave	2 3 4 5 6 7	6	Rotary switch
	Scale	C, C*, D, D*, E, F, F*, G, G*, A, A*, B	12	Rotary switch
	Pitch shift	A* = 440, 441, 442, 443, 444, 445 Hz	6	Slide switch

6 buttons covered

		Mode	Number of steps	Selection by
Mode selection	Power switch	OFF, Tuning, Standard sound	3	Slide switch

JM adds: the specifications will come out very small I'm afraid, but I hope will be legible, if only with a lens. I assume the left hand one to be the Arion and the one to the right to be the Seiko, but Daniel didn't specify.

Tuning function	System: Display of frequency deviation on a meter Detection of note: By a built-in condenser microphone Tuning range: (a) ± 50 cents of a selected scale (b) Harmonics an octave higher than a selected scale Accuracy: ± 1 cent (0.06%) Other: External microphone jack
Standard sound generation	Output waveform: Square Accuracy: ± 1 cent Other: External microphone jack
Calibrating function	Battery check: by pushbutton switch Calibration of meter drift according to internal standard signal
Power supply	S-006P, 9 V
Dimensions and Weight	165(W) x 70(H) x 35(D) mm, 300 g

STOLEN INSTRUMENTS: Jonathan Swayne had a case of instruments and a case of tools stolen from his car; if anyone comes across anything that might relate to the following list, please let him know; his phone number is 0458-50911.

Stolen on 6th December 1983 from a Volkswagen van parked in Laurier Road, London NW5, the following instruments, contained in a black vinyl-cloth covered wooden case:

Flemish bagpipes, in D, after Breughel. Stained pearwood chanter; other wooden parts stained golden brown; two parallel drones; my mark on chanter stock; dark brown leather bag.

English bagpipes after 16th c model; unstained boxwood with black buffalo horn mounts; two divergent drones in common stock; large bells to drones and chanter; mid brown leather bag; no mark but made by me.

Bulgarian bagpipe (gaida) in high D; wooden parts of fruitwood stained black; light coloured horn mounts with incised semicircle decoration; single drone; typical one-piece inverted sheep/goatskin bag.

English concert flute by Boosey & Co, ca.1850, designed by R.S.Pratten, the so-called 'Pratten Perfected' model, eight-key open hole version. Probably cocuswood; silver keys; ebonite repair to lower barrel of headjoint. In original fitted case with label signed by Pratten.

Bulgarian kaval (end-blown flute); plum or apricot wood stained black; in three pieces; horn mounts and inlaid tin decoration.

Alto renaissance recorder in F; one piece; maple stained mid brown. Double bottom hole, lefthand one filled with wax. Mark - gothic S. Made by me.

Boxwood whistle/flageolet; stained light brown; my mark. Brass tuning slide; pitch d''.

Boxwood whistle/flageolet; brass tuning slide; no mark; pitch b' flat. Made by me."

JM adds: appart from the Pratten flute, these should be pretty easily recognisable, so do please keep an eye out for them.

OTHER COLLECTIONS: The Edinburgh University Collection of Historical Musical Instruments and the National Museum of Antiquities of Scotland have together acquired the collections of J. & R.Glen, whose bagpipe shop in the Royal Mile many of us remember. Some of the collection went, early this century, to the Glasgow Museum (and I well remember old Andrew Ross grumbling about this when gossiping with him in the shop; he was Glen's partner and successor), but there was still a good deal left. Both the Andrew Rosses, father and son, were very helpful in what they lent to the Galpin Society 21st Anniversary Exhibition, and even more helpful and generous in what they allowed to remain in the Reid after the Exhibition. Now, while the National Museum has acquired all the bagpipes (and I hope the tools and other equipment), everything else is permanently and safely in the Reid Concert Hall. A good deal, perhaps everything (we shall doubtless hear in due course) has been listed in the excellent catalogues which have been reviewed in our Qs, but for any further information contact Arnold Myers for most of the instruments (either as in our List of Members or at Reid Concert Hall, Edinburgh University, Edinburgh EH8 9AG), and for bagpipes contact Hugh Cheape, National Museum of Antiquities of Scotland, Queen St, Edinburgh EH8 1JO. And congratulations to all concerned.

THE MARY ROSE DULCINA: One of the new members who joined FoMRHI at the Horticultural Hall, Charles Foster, had with him an instrument that he had made from the drawing which Frances Palmer published in Early Music. It sounded very well and also convincingly. He has promised us a Comm on it, so I'm not saying any more here except that those of us who were standing around the FoMRHI stand at that moment now have a good idea of what Tinctoris's dulcina sounded like. Does this tantalize you? If so, wait for Charles's Comm (and also for the Mary Rose X-radiographs - see the Comm in this issue on the UKIC and V&A Symposium).

REQUESTS: Richard Collier says: "Can we have more measured drawings of smaller instruments - like the recorder in the recent issue?". In fact what Angelo Zaniol had said when he sent that drawing was: "Don't you think it were very useful to publish such instrument drawings in

our bulletin, with appropriate comments, instead of selling them (at a very good price indeed) to concerned people?", and this was why Angelo sent his drawing. The drawing that he was referring to in his letter was the Fred Morgan drawing of the Bressan treble recorder which is now in the Bate. The problem with plan is that it is on an A3 sheet; I had made an A4 copy, which was legible, but to reduce that to A5, as would happen if we printed it here, would really make it too small. I will bear it in mind, however, for the future, and if any of you have plans which you are willing to put into FoMRHI and which would be legible in the Q, then do please send them along.

David Crookes asks: "I'm compiling a list of period inscriptions like Sic transit for an article in a literary journal. Has anyone come across an odd legend or inscription, and could they let me know what instrument it was on? All help gratefully acknowledged in footnotes."

Thomas Kiefer (new member - address in this Supplement) asks: "I am interested in finding sources for plans and drawings of harpsichords, especially those of Italian origin" - can anyone help him?

Graham Lyndon-Jones asks: "When did Catajo stop being a musical establishment? I.e. what is the terminal date for that section of the Vienna Kunsthistorisches Museum Collection?" This is a particularly interesting point for those interested in curtals, because it would give at least a terminal date for that curious instrument made in three pieces, C.201, illustrated in my Baroque & Classical, plate 23, and of course in Schlosser.

Peter Foster writes: "While on holiday this summer, I tried to find any buildings/stately homes which had musical instruments that one could see/play. Apart from a few e.g. Fenton House, I was unable to find any. If people know of any places around the country, I would be happy to compile a list and make it available." I'll send him notes of the ones I know, and if everyone else would do so, I hope he'll send it in as a Comm and update it from time to time.

OFFERS: David Vanacek (new address in this Supplement) says: "I can offer other members professional assistance with computer programming".

And a rather odd one: Theo Wyatt of 8 Wilton Grove, London SW19 3QX, offers a recorder testing and tuning service. He measures each note against a Korg and with a pressure gauge to see how even the tuning is (what tuning, I wonder? Equal temperament, meantone or what?), and then sends a plan of the result with suggestions of how it can be improved and offers to do the improvements. The report and test costs £2; retuning costs £5; plus postage.

AVAILABLE: One of the exhibitors at the Horticultural Hall was Robert Cronin. He has an interesting typescript of a talk he gave to the American Musical Instrument Society in 1981 on the Evolution of the Bassoon Bore. If you're interested, he has copies available (I can't remember for how much, I'm afraid; I think it was a pound or so plus postage) and his address is in this Supplement. His data covers 7 curtals, 3 3-key, 6 4-key, 6 5-key and 8 6-9-key bassoons, plus for comparison a recent Heckel.

The 1984 Archivum Musicum Catalogue has appeared. I'm not clear whether their texts are facsimiles or not (I think they are), but they are reasonably cheap. There are four sections: Strumentalismo Italiano, L'Art de la Flûte Traversière, La Cantata Barocca, and L'Arte della Chitarra. Their address, if you want a copy, is: Studio per Edizioni Scelte, Lungarno Guicciardini 9 r, 50125 Firenze, Italy.

PLANS AVAILABLE: A new list, too, from Michael Muskett (Pipers Croft, Chipperfield Road, Bovington, Hemel Hempstead, Herts HP3 0JW) which includes plans for hurdy-gurdies by Pimpard (en luth) @ £25, by

Lambert (en guitar) @ £24, and Doreen Musckett's tutor at £9.75.

RECENT EXHIBITIONS: A good many of you were at the Horticultural Hall for the Early Musical Instrument Exhibition, either exhibiting or visiting, and it was a pleasure, as always, to meet you all, especially of course those who had only been names before. It's always a pleasant, if hectic, occasion; a chance to meet one's friends and to make new ones. I don't know how it was for any of you as far as business is concerned; FOMRHI did OK, making a lot of new members and picking up some old ones who hadn't got round to renewing earlier (see the unusually large Members List Supplement herewith!) and saved a lot of you postage on your 1984 renewals. I think it a valuable occasion for the public; it gives them a chance to compare many different makes and types of instrument, and even if they didn't buy on the spot, at least it gives them a chance to decide what to order (and just as important from their point of view, what not to order). There were a couple of stands selling original (I almost wrote real) instruments, and the Bate acquired an interesting elaboration of the Siccama Diatonic Flute, and I bought a nice ciaramella. Also exciting was the appearance on Tony Bingham's stand of the reprint of Tony Baines's European and American Musical Instruments, an invaluable book since it contains, in photographs, almost every important non-keyboard instrument in the world, from the renaissance to the present day. It has been fetching high prices on the second hand market while it's been out of print and is now available at the ludicrously low price of £5.95. Tony Bingham and others have it in stock; I have a stock here at the Bate (no, I won't sell it by post) and it's been going like hot cakes. This price may not last; the cover says £12.95.

Jonathan Swayne was at the Herne Die Flöte Exhibition (which also admitted other instruments (it was on his way back that his instruments were stolen). He says "It was magnificently well-organised; first class concerts were held in the adjoining theatre, and an imaginative inclusion was ethnic/folk flute playing from Ireland (Matt Molloy at present with the Chieftains), Iran (Nay), India (transverse flute), and Japan (Shakuhachi). An impressive collection of flutes and recorders of all kinds was gathered for an exhibition in the local castle, which runs until 8 January.

FUTURE EXHIBITION: The next Festival van Vlaanderen at Brugge (Bruges) is 28th July to 11th August. The leaflet they've sent me describes the competitions, which are for solo song, melody instrument, lute and ensembles, but merely says that there will be an exhibition of instruments. If you're interested, write to R.Dewitte, Collaert Mansionstraat 30, B-8000 Brugge, Belgium.

RECENT CONFERENCES: I went to the UKIC/V&A Conference, which I wrote about in the last Bulletin. It was interesting enough that I've described it at length in a separate Comm, which you'll find elsewhere here.

FUTURE CONFERENCE: Peter Stacey writes that there will be a Bagpipe and Hurdy-gurdy Conference at the Pitt Rivers Museum here in Oxford (as you may know, they have a fine collection of bagpipes, the catalogue of which by Anthony Baines is now one of the standard books on the instrument), as part of the Museum's centenary celebrations. The date is the ~~weekend of 22-23 September~~ and offers of papers are welcome and should be addressed to 'Bagpipes and Hurdy-gurdies, Pitt Rivers Museum, South Parks Road, Oxford OX1 3AP. There will also be a series of concerts by leading exponents of the instruments.

RECENT COURSE: I must apologise that you didn't get adequate (or any) notice of our Bassoon Weekend; it was arranged after the July Q went out, and the October Q went out too late for it. I hope that you

noticed the Lute Weekend next month in the Bulletin Supplement, because this Q will come too late for that! Unfortunately, we have lost our grant, after many years of generous support, for these Weekends, which means that we are going to have to charge for them in future. The Lute Weekend was already advertised before this happened, so I'll probably pass the hat round there, but in future it'll be warned in advanced. (See next section). I hope that they will continue; it'll depend very much on how the next one or two go, but it would be a pity if they lapsed.

FUTURE COURSES: Bate Collection Horn Weekend will be in May, the 12th and 13th, concentrating on hand horn but with some attention to corno da caccia. The two players (a weekend needs two, since only an exceptional player would have enough stamina) are John Humphries, who started as a handhorn player in the Bate, and Robert Maskell. There did not seem much point in having a maker, since brass instrument making is much rarer than woodwind and strings, but Peter Barton will conduct the Saturday evening and Sunday morning sessions on practicable running repairs, dent-removing, patching, resoldering stays, and so on. The Weekend starts at 11 am on the Saturday and will run through as usual to about 5.30 or 6, followed by the repair/maintenance session, which goes on till everybody has had enough (usually 9ish); Sunday morning time will be fixed on Saturday (probably 10.30 or 11); rehearsal at 2.30 as usual, and concert at 8, both with the addition of a small string group. As I said in the previous paragraph, we will have to make a charge for this, which will be £15 to include the concert and coffee etc on the working sessions. If this one is a success we shall go on in the autumn; I'm thinking of oboe for that one.

Pat McNulty is taking master classes again this year at the Edinburgh Folk Festival on the Union Pipes, for five full days, April 11-15th inclusive. He's not told me what it costs, but you can get details from the Festival Director, Dr. John Barrow, 170 High Street, Edinburgh EH1 1QS.

The latest Huismuziek list of courses has just arrived. Most of the making courses are one day, but if you'd like a day in Holland, they could be worth thinking about. You can get a copy from Bouwerskontakt (in the Members List, or if you're in this area come and look at mine; there are too many to list. How far you'd get without speaking Dutch, I'm not sure; most people there speak English, but the course would presumably be conducted in Dutch. However, all the Bouwerskontakt people I've met are very friendly, keen to pass on their knowledge to others, and speak English.

Walter Hermann Sallagar, who used to be one of our members, is still running his courses for making instruments (and playing them) at Breiteneich. Two series this year, 15-29 July and 29 July - 12 August. Shawms (John Hanchet) and curtals (Graham Lyndon Jones) at both; cornamuse, kortholt and reeds (Barbara Stanley) and renaissance and baroque recorders (Alec Loretto) in the first series, and renaissance traverso (Barbara Stanley) and both recorders (Loretto) again in the second. Information from Walter at Kopernikusgasse 13/1, A-1060 Wien, Austria.

Walter is also involved with the International Double Reed Society Congress in Graz, August 11-15. This seems to include a conference, concerts, competition, exhibition of instruments and music, and so on and so forth. Whether there's any interest in early instruments I don't know; it doesn't look much like it, but doubtless he could tell you.

OTHER JOURNALS: (if journal is quite the word; Our Contemporaries might be better). NEMA (The National Early Music Association) has at

last produced its first Newsletter. It includes some reports of the meeting here in the Bate last May and two or three other half-page articles (the whole thing is a single sheet, 4 page spread. Under News Items, it says that NEMA has been talking to the Department of Trade to see whether any finds might be available for exhibiting at such places as Boston; that a survey of educational opportunities and facilities in Early Music is under way, and that the UK Council for Music Education and Training now has a NEMA representative.

Even as I wrote this paragraph (the weekend came between pp 10 & 11), the notice of the NEMA AGM arrived. We (FoMRHI) are sometimes accused of amateurism, but even we would never think of calling a meeting at five days notice (alright, be fair, eight days from the date of posting). We have strict provisions in our Rules for the conduct of business (ours is by post, rather than at meetings), and we adhere to them. So has NEMA (I was a member of the committee that framed them; as I remember, the length of notice for the AGM seemed to me rather long at the time) and they ignore them. Sixty days notice is on the long side, but nevertheless nobody can take seriously an organisation that only gives eight. Whether they will take any decisions, I don't know (I can't be there at that notice), but they will anyway be invalid. We had hoped that NEMA was going to be an effective force, unifying all the various groups, societies, and so forth who are working in Early Music and provide a single voice and pressure group. It looks as though it is going to turn out the most amateur of us all, which is a great pity after so much work was put into it by people like John Thomson.

Someone was wandering round the Horticultural Hall Exhibition handing out flyers for TATHS, the Tool and Trades History Society. They produce a Newsletter and a Journal, neither of which I've seen; they were founded last year "to further knowledge and understanding of hand tools, of their use and of the trades and craftsmen that use them". If you're interested, subscription is £10 and their address Winston Grange, Debenham, Stowmarket, Suffolk IP14 6LE. They seem a bit interested in profit since they charge an extra £2.50 per head for extra members in one family or household, for which you get nothing more (which is why we don't charge for joint members).

POST-SCRIPT: While writing this, a much improved rejoinder has arrived from Friend Overton (see Further to Comm.483 on p.5 above). It raises a number of interesting points, and I hope may lead to further correspondence from FoMRHI members, especially those who have actually read the book. It also raises some questions on reviewing in general. Probably I write rather too many of the reviews myself; however, I do usually get books received in one quarter into the next Q, whereas whenever I send out a book for review, it vanishes from sight for six months or more (which reminds me of two or three that I should be chasing to find out what's happened to them; one you will find here, several years late, but that's because it took a while to get it back from the first reviewer and off to the second, who has been very quick with it).

STATISTICS: It may interest you to know that FoMRHI has now had over a thousand members. I put it that way because people join and then drop out again, and since by no means everybody has renewed yet for 84, I don't know what our current membership is. Everyone gets a number when they join, though (it helps us to keep straight those with the same name, and it appears on your receipt each year), and the latest score is 1023 if I remember rightly. There is, of course, a continual flow of letters asking for information about FoMRHI, many of them saying that they've seen some copies. That is important; we are more interested in spreading information even than gaining members,

and personally I'm happier with 600-700 members and 1,000 readers than I would be with 900 members and only 900 readers, so do please go on showing FomRHIO to your friends and colleagues, even if they resist your encouragement to join for themselves. A psychological side-light which may interest you: the more an enquirer says 'please rush the information' or 'I'm extremely interested' or other phrases of great interest and urgency, the less likely he (or she, but that's another side-light: why are there so many more male than female members?) is to join.

FINALE: That's the lot, anyway for the moment. More may appear while I'm doing the Members' List Supplement.

Some has, but first a couple of things I forgot:

LIBRARY HELP: Malcolm Jones (address this Supplement) is a professional music librarian and he offers help to anyone who needs it who is searching for books, music or records, and anything else which is in the areas of his expertise.

LAY-OUT OF MEMBERS' LIST: It has been suggested that the main list would be more useful if it were, like a phone book, surname followed by first name(s); eg Montagu, Jeremy. What do you feel about it? For myself, it's a bit easier and quicker to do it straight off the cards (which are as it is now), but if it would really be easier to read the other way, I could probably cope (maybe a bit more white stuff would be used while I'm doing it, but I should be able to cope). It was suggested that if it goes on to word-processor it would have to be the other way, but whether it will, I don't know. I'm often told that it would save me a great deal of time if it were on word-processor, but the problem is whether a) I or FomRHI can afford to hire one (I'd like to buy one, but Gwen says that we can't afford it; if one of the publishers who are still looking at Ethnic and another project would make up their minds and say yes, then we probably could afford it, or anyway I probably would!), and b) (which would become irrelevant if I did buy one) whether I can find the time to sit down and learn how to use it. The next one will be done in a rush, anyway, because I expect to be on holiday till April 8th or so (NB next Q will be held up as result), and the idea of taking a week or so longer than usual for the first one while I fumble with the machine, forgetting to put pages into the memory and so on, is not wildly inviting. Anyway tell me what you think between now and then about the order.

POST OFFICE CODES: Far too few UK members have given me their PO Codes. They are always threatening us with extra postage costs for addresses without; one day it'll happen, and then we'll have to have a third subscription rate: UK without PO Code.

FIDDLE BARRING: Angelo Piumelli wants to know "the opinion of competent Fellows as to the possible barring in the Medieval Fiddle (Viella), its sizes and the corresponding string length in accordance with tunings by Jerome of Moravia". Can anyone help him, Fellow or not?

SHOP DISPLAY/SALE SPACE: Nick Odell (address in this Supplement):

I have left my old address with its rather inadequate workshop and by Feb 84 will be setting up at 849 Church Terrace, Outwell Nr Wisbech, Cambs. (phone 0945 773912) where in addition to a much more suitable workshop I will also have a double fronted shop. Members making complementary instruments to my own and who are working to professional standards and who are perhaps finding it difficult to show their work are invited to discuss using part of my display area for a time. Carriage and insurance would be down to you, but there would be no charge for a pure exhibition given without financial motive i.e. if you don't sell anything, I won't charge anything provided it doesn't cost me anything! If you are interested please phone or write with S.A.F. and if you are in the neighbourho

CELLO MUSIC: Grancino Edition (2 Bishopswood Road, London N6 4PR; 1109 Avenida del Corto, Fullerton, CA 92633; Schirmerweg 12, 8 München 60) have produced "An important series of Baroque and Classical Cello Music" both in facsimile and in modern editions. On the sample they sent, the only facsimile looks good and clear, and the modern editions reasonably clean (except, of course, that the basses are realised). There are 20 volumes available now (93 works); another 20 are due out this year.

That really is the lot. Remember our Horn Weekend in May (12/13). It's looking way ahead, but the Galpin AGM will be here (July 8th). I do always welcome group visits by interested societies - neighbouring Forums (shouldn't it be Fora?) take note. Also of course by individuals, but do ring up first in case I'm on holiday or otherwise out or away.

Enjoy the wind and the rain and the snow.

Jeremy Montagu

FoMRHI Book News

Jeremy Montagu

Gerhard Stradner has sent me his new Spielpraxis und Instrumentarium um 1500, VWGO, Wien, 1983. Review next time with luck; would anybody whose German is better than mine like to tackle it?

Contents of Bouwbrief Nr 30 (Aug.1983) Paul Gretton

- 30.8.1. A method of converting cents to Herz at varying basic pitches, by Charles Stroom.
- 30.8.2. Building an acoustic jazz guitar, by Wouter Dekker. Ten pages, detailed. Will be continued. Essential reading if you live in Manchester.
- 30.8.3. Making the neck of a gamba with the aid of a reference-plane, by Fried Manders.
- 30.8.4. Making registers, jacks and wrest-pins for harpsichords, by Jan van der Meer.
- 30.9.1. Adjustable flat reamers, construction and use, by Jan Bouterse.
- 30.9.2. A new method of drying wood, by Jan Bouterse. Uses an infra-red oven.
- 30.9.3. Comments on Boubr. 25.8.2. (Wound strings), by Jan Renckens.

For further information, write to the Hon.Sec., not to me. PG

BULLETIN SUPPLEMENT

by Eph Segerman, guest editor for this issue.

BOOK BARGAIN

The book "Instrument Scales and Temperaments" by Llewellyn S Lloyd and Hugh Boyle is a standard text on musical intonation. Hugh Boyle expanded it by about 40% for the second edition published in 1978. Its price then was £9.95. When the publishers decided to clear out their stock recently, instead of letting it become "remaindered", Hugh Boyle bought the stock himself. The book is now available from him at £5.00 including postage. For those who don't already have the book, this is an opportunity and a bargain. Order it from Hugh Boyle, 405 Green Lane, London SE9.

INSTRUMENTS EXHIBITION

The annual Early Music Competition is again being held at the College of Adult Education at Oxford Street and Cavendish Street in Manchester. It will be on the morning and afternoon of Saturday, 25th February. (The adjudicators are Michael Morrow, Andrew Parrott and John Bryan.) As with last year, there will be an associated exhibition of instruments. All makers are invited to set up a stand to hawk their wares.

There is no charge. If interested, contact the organiser, who is me, i.e. Eph Segerman, 6 Needham Avenue, Chorlton, Manchester M21 2AA, or phone 061-881 8134.

O'KELLY TABLE

Djilda asked me to check out the following table of Pyramid lute strings submitted by Joseph O'Kelly. At his request it is here reproduced as O'Kelly submitted it, without the changes I suggested to him. The changes were to follow more modern practice in notation and change octaves between b and c instead of between g# and a, and to recalculate or otherwise justify his formulas. His quantity PN is defined as the diameter of an equivalent plain nylon string that has the same weight per unit length as does the string in question (what we call "equivalent diameter").

The problem with the first formula (for PN) to the lower right of the table is that the constant of 56 implies a density of nylon of less than one, so it should float in water! The constant should be $\sqrt{.980/\pi\rho}$ where ρ is the nylon density (in gm/cm³) and $.980=G \times 10^{-3}$ where G is the acceleration due to gravity (in cm/sec²). We measured the density of one piece of Pyramid nylon in a density gradient column (see GSJ XXVII (1974) p 59, Table 1) and found it to be 1.08gm/cm³. This would make the constant 53.7, which is 4% less than O'Kelly's value of 56. The difference is much greater than that between adjacent entries in the table. Whether O'Kelly actually measured the tension or used the tension information given in Pyramid's own tables is not clear.

The problem with the other formulas is that each constant should be equal to the square root of the ratio of the density of nylon to the density of the other material. Assuming the above density for nylon and that the densities of gut, steel and brass are 1.35, 7.9 and 8.7 gm/cm³ respectively, we calculate the constants to be 0.895, 0.117, and 0.111 instead of 0.875, 0.375 and 0.34 as given by O'Kelly. Only with the metal formulas can someone get into a stringing disaster by following O'Kelly.

The main advantage of this table over that given in Comm 177 is that the values of outside diameter are given so identification of old strings is much easier. In addition, a few more of the lighter strings and a range of the very heavy strings Pyramid make are included. The values of O'Kelly's PN's differ from Hodgson's equivalent nylon diameters in that Hodgson used our string calculator (and implicitly, our value for the density of nylon) and O'Kelly presumably used his own formula. The difference between us on the constant in O'Kelly's formula accounts for much of the differences in values.

With the above warnings, this table can be useful (especially the outside diameter information) for lute repairmen whose customers insist on nylon stringing. We might preach authenticity in stringing, but while the majority of professional players who lead the field are not yet properly educated in this matter, it may be poor evangelism as well as poor business if we do not give their emulators what they want.

Tension table for lute strings (c. Joseph M.O'Kelly 1982.)

Hz.	Pyramid	P.N. mm	Outside diameter.		Pyramid	P.N. mm	Outside diameter	
			thou	mm			thou	mm
g'	392.0							
f+	370.0	0.35	.35	13.8	.35	1022	1.86	31.1
f'	349.2	0.40	.40	15.7	.40	1023	1.91	32.0
e'	329.6	0.425	.425	16.7	.425	1024	1.94	32.8
d+	311.1	0.45	.45	17.7	.45	1025	1.98	33.6
d'	293.7	0.475	.475	18.7	.475	1026	2.08	34.3
c+	277.2	0.50	.50	19.7	.50	1027	2.11	35.1
c'	261.6	0.525	.525	20.7	.525	1028	2.15	35.9
b'	246.9	0.55	.55	21.7	.55	1029	2.20	36.7
a+	233.1	0.575	.575	22.6	.575	1030	2.28	37.5
a'	220.0	0.60	.60	23.2	.60	1031	2.32	38.3
g+	207.7	0.625	.625	24.6	.625	1032	2.37	39.1
g	196.0	0.65	.65	25.6	.65	1033	2.41	39.9
f+	185.0	809A1	.66	19.5	.50	1034	2.47	40.6
f	174.6	0.675	.675	26.6	.675	1035	2.52	41.4
e	164.8	909A1	.68	20.2	.51	1236	2.59	43.5
d+	155.6	0.70	.70	27.6	.70	1237	2.67	44.3
d	146.7	1009A1	.71	21.0	.53	1238	2.74	45.0
c+	138.6	1010A1	.72	21.7	.55	1239	2.80	45.9
c	130.8	0.725	.725	28.5	.725	1240	2.88	46.7
b	123.5	0.75	.75	29.5	.75	1440	2.95	47.9
a+	116.6	1011A1	.76	22.5	.57	1441	2.98	48.7
a	110.0	1012A1	.78	23.3	.59	1442	3.04	49.5
G+	103.9	0.80	.80	31.5	.80	1443	3.11	50.3
G	98.0	905	.82	17.1	.43	1345	3.16	51.2
F+	92.5	1013A1	.84	24.1	.61	1445	3.23	51.84
F	87.3	0.85	.85	33.5	.85	1348	3.32	53.6
E	82.4	1014A1	.86	24.9	.63	1448	3.37	54.2
D+	77.8	906M	.86	17.9	.45	1350	3.46	55.2
D	73.4	1015A1	.87	25.7	.65	1450	3.48	55.7
C+	69.3	906	.89	17.9	.45	1650	3.49	56.9
C	65.4	0.90	.90	35.4	.90	1652	3.63	58.5
B	61.7	1006M	.91	18.6	.47	1653	3.68	59.3
A+	58.3	1006	.94	18.6	.47	1654	3.73	60.1
A	55.0	10065	.95	19.0	.48	1655	3.78	60.8
GG+	51.9	9075	.98	19.1	.48	1856	3.82	62.7
GG	49.0	1007	1.00	19.4	.49	2056	3.92	63.7
FF+	46.3	908	1.02	19.5	.49	2057	3.96	64.5
FF	43.7	10075	1.03	19.8	.50	2058	4.03	65.3
EE	41.2	1008	1.05	20.2	.51	2458	4.06	67.2
		9085	1.07	19.8	.50	2460	4.21	68.7
		909	1.10	20.2	.51	2462	4.24	70.3
		10085	1.11	20.6	.52	2463	4.28	71.1
		1009	1.12	21.0	.53	3265	4.57	76.0
		10095	1.14	21.3	.54	3268	4.68	78.3
		1010	1.19	21.7	.55	3270	4.82	79.9
		10105	1.20	22.1	.56	3272	4.91	81.5
		1011	1.25	22.5	.57			
		1012	1.32	23.3	.59			
		1013	1.35	24.1	.61			
		1014	1.38	24.9	.63			
		1015	1.47	25.7	.65			
		1016	1.53	26.5	.67			
		1017	1.61	27.3	.69			
		1018	1.65	28.0	.71			
		1019	1.69	28.9	.73			
		1020	1.74	29.6	.75			
		1021	1.81	30.4	.77			

Formulae:

$$P.N. = \frac{56 \times \sqrt{\text{tension in Kg}}}{\text{frequency(Hz)} \times \text{String length}}$$

$$\text{Cut} = P.N. \times 0.875$$

$$\text{Steel} = P.N. \times 0.375$$

$$\text{Brass} = P.N. \times 0.34$$

EDITORIAL

A perceptive sociologist once said that soon after any organization is formed to pursue particular goals by engaging in particular activities, it develops internal wrangling between a conservative faction who want to keep it as it was originally envisioned, and a radical faction that wants to change the goals or activities to be more 'relevant' or 'effective' or whatever. Each faction sincerely believes that it is right and the other is wrong. From the outside, it appears that what any organization does and how it does it is quite arbitrary, and which faction wins is purely a matter of tactics and strength in the power struggle.

We started FoMRHI as an organization to promote historical accuracy in early instruments. The members were to be makers, players and scholars who were interested. We realized that most makers and players were only committed to this aim to the extent that they considered 'practical'. We hoped that the exchange of information that we provided would put more historical detail into the 'practical' category of each member.

Once the Quarterly was established as a useful communications medium, it was obvious that exchange of practical information that was not necessarily connected to historical research was highly appreciated by the members. The inclusion of this information was also considered useful because it could induce the makers with less commitment to historical accuracy to become members and perhaps eventually to convince them of the practicality of a more historical approach.

It was never envisioned that FoMRHI should accurately mirror the attitudes and activities of the members (or Fellows) with respect to historical accuracy. This would deny the original purpose, which was to make these more historical. The balance we have been trying to maintain is a strong bias on the historical side with the non-historical information in snippets in the Bulletin and in occasional short Comms. The organization was set up so that the members cannot change this policy, but the Fellows can. If the Fellows decide that they want to change the bias of FoMRHI, they are free to do so.

The fact that a small group within the membership, the Fellows, makes all decisions, may seem to be undemocratic elitism. It is worlds more democratic than other international organizations in the field based in England. In them, important decisions are made at Annual General Meetings where the voters are the local entrenched leadership and a handful of their local supporters. We felt that if membership in FoMRHI was unrestricted, we needed voting to be restricted to those who had a good track record in being committed to our original objectives. Every organization must have safeguards against takeover for exploiting whatever prestige it has accumulated to ends other than that for which it was organized. All ballots of Fellows are by mail, so control by local activists is avoided.

Jeremy has been disappointed at the number of Fellows who actually vote when the ballots are sent out. This might indicate that the system isn't working, or it may be that really important issues have not arisen. If any member who believes in FoMRHI's objectives feels deprived of a say in how we do things, please let us know. If people feel that the system is somehow unfair, we should at least consider changing it. We could also have more Fellows.

Bouwbrief Summaries -- a clarification

Paul Gretton

Although I end each Bouwbrief summary with the brutally clear request/plea/threat "Don't write to me, write to the Hon.Sec.if you want further information", I still receive periodical requests for originals and/or translations, on the lines of "Dear Paul Gretton, Please send me translations of the following articles....." There then follows a list of up to 30 (sic) Bouwbrief articles. Until now I have answered politely, explaining that I am not the one to get in touch with, but I intend ignoring all future requests.

Can I just clarify the point of my summaries? The idea is simply to bring to the attention of FoMRHI members the existence of relevant articles in the Dutch sister-journal. If you see anything which takes your fancy the drill is to write to the Hon. Sec. for a copy of the original (Dutch) article. What you then do with it --read it in the original, get it translated, throw it away..... -- is up to you.

I supply neither originals nor translations of Bouwbr.articles!

The UKIC and V&A Christmas Symposium on Early Musical Instruments

The attendance was excellent, higher certainly than I had expected, and included many instrument makers, museum workers, conservators, and other interested people, and a good proportion were FoMRHI members I was glad to see. The programme was, as I suggested in the last Bulletin, somewhat unfocussed, ranging from the descriptive to the technical, with something on restoration and a very little (despite the UKIC sponsorship — UKIC stands for United Kingdom Institute for Conservation) on conservation; in fact there seemed to be considerable confusion in several speakers' minds between the two subjects.

After an introduction (to which I will return) by Peter Thornton, the Keeper of the Department of Woodwork at the V&A, who is, since most of them are made of wood, in charge of the European instruments in the Museum (it's the same reason, after all, that it's the London College of Furniture which runs the instrument making courses in London), the opening speaker was Carl Dolmetsch. His subject was the Relationship between Design and Sound Reproduction, and he carefully showed us what a recorder, a viol, and a rebec were, describing them and other instruments, and mentioning in passing the conical bores of trumpets and clarinets. Despite his title, he showed no awareness save for visual aesthetics (which was the connexion in which he mentioned them) of the tonal and acoustic functions of the thickening at the end of a recorder's foot, nor of the C or f holes of string instruments, nor of the rose of a harpsichord, lute or guitar. He did not mention conservation at all, nor was there much on restoration (just as well, perhaps, when I look at our Hass clavichord here and think of Chester and the Bressans) save for a description of how he removed painted decoration from a keyboard instrument using a paint stripper.

He was followed by Peter Mactaggart who, with a fascinating series of slides, showed just how much could be learned about the history of an instrument, what had been done to it and often when it had been done, by a proper study, scientifically conducted, of its painted decoration. Pigments can be identified through microscopic examination, and since many of them were introduced at known dates and places, an alteration to the instrument can often be identified in this way. Microscopic examination of sections through the layers of paint on an instrument can show various stages in its decoration and can, for example, help to identify an instrument which has been described as being of a certain colour in an inventory but which may be a different colour today. It is intended that the papers presented at the Symposium will be published in due course, and this is one which will be well worth reading. Some of the material is also covered in the book by Peter and Ann Mac-taggart reviewed elsewhere in this Q.

There were two papers on restoration from quite different viewpoints. Charles Beare spoke on the restoration of violins and Reginald Dee on the restoration of some of the instruments in the V&A. Mr. Beare stressed that damage that had often been done to instruments, not necessarily by incompetent restorers but more often due to fashion and the demands of the customers, mentioning for example the common insistence, particularly in America, on a high gloss polish, to the detriment of any original varnish and often to the instrument itself. He spoke almost entirely on restoration for professional playing use (it was rather an odd paper for a museum symposium, just as I had thought that it might be) and he mentioned only very briefly the concept of conservation of instruments as historic documents, and that chiefly as the only use for those rendered unrestorable for playing purposes

by the ravages of woodworms and other factors. Reginald Dee, the V & A's Senior Furniture Conservator, was responsible for the repair of many of the Museum's instruments when they were extracted from the store room in which they had languished for most of a century and put on display in the gallery over the Costume Court. Much of the necessary equipment had to be improvised (how many workshops have, for instance, clamps which could cope with the giant double bass?), often because of financial constraints (can a museum afford to buy specialist tools and other equipment which will be used only once on one instrument?). He demonstrated an ingenious method of clamping lute backs, using a network of linen tape tightened by placing cork blocks strategically between tape and instrument (the demonstration at the Symposium was on an 'ud of his own). As a supplement to his talk, there was a display in the Cartoon Gallery (where we first assembled and whither we adjourned for lunch and tea) of photographs of work in progress on many of the V & A's instruments which he had not the time to describe or discuss in his paper. One could approve the removal of such accretions as a guitar neck and belly on a Laux Maler lute back, but it seems not to have occurred to the Museum that that back could then be displayed as an entity, instead of having a false neck, pegbox and belly fitted. This is perhaps the result of having a collection of instruments, which may be either functional or historic documents, in an institution whose primary purpose is to be a museum of decorative art.

The great disappointment of the day was the absence of the Mary Rose instruments, whose presence had been promised and advertised. A letter from the Mary Rose Trust was read out, and the excuse given therein, that change of climate and the vibration on the road from Portsmouth to London and back might damage the instruments, was hard to resist at a conference sponsored by the UKIC. Nevertheless, their absence, coupled with the fact that Frances Palmer, their musical consultant, has not been permitted to see the instruments for eighteen months, is bound to add fuel to the many rumours that have circulated about their present state and their response to conservation. As Herbert Myers pointed out (in the July 1983 *Early Music* under the heading of *Observations*), the shawm is unique in the world and could at last solve the mystery of the *Tinctoris dulcina* (see A.C. Baines in *GSJ* 3), and it would be a major tragedy, comparable with the destruction of every original virginal, for example, if, as rumour insists, lack of proper treatment has caused its disintegration. The result of this broken promise was that Frances Palmer was reduced to repeating, with a few extra comments, what she had already published in *Early Music* (January 1983), showing us some slides of the instruments made when they were first recovered from the wreck. On display in the Cartoon Gallery was a set of the scale drawings from which those published in *Early Music* were taken (copies of these, she said, were not available for sale; all that is available is what's in *Early Music*). One point that she added was that it was hoped to take X-ray photographs of the shawm to determine whether the bore is, as it appears to be, cylindrical, and that Graeme Lawson (an archaeo-organologist) is waiting for these to make a copy of the instrument. I mentioned to her the existence of an instrument made from the plan in *Early Music* (see this Bulletin, p.7 above).

The most important, and the most thought-provoking paper was Derek Adlam's on the Ethics Involved in Restoration. He was the only speaker to make a firm distinction between Conservation and Restoration, defining the former as a process pertaining to preservation, halting natural decay and stopping time, and the latter as a preparation for some function, whether practical or visual, and stressing that Conservation should always take priority, even when it renders Restoration

impossible. He was particularly interesting on the matter of ephemeral parts (strings, felts and other cloth parts, etc; he is of course a keyboard man), pointing out that in any restoration these had inevitably to be removed and that their proper relationship to the instrument was then lost, their positions, methods of attachment and so on, however carefully they might themselves be preserved as documentation. He was interesting also on the problems of identifying later accretions to instruments, mentioning that a number of instruments had been destroyed by the removal of parts which had been misidentified as later accretions but which had in fact been original. He ended with the question of whether instruments should be played, saying that if they were subjected to the strains of playing tension, inevitably they were at risk and their decay hastened. His also is one of the papers which it will be important to read when eventually they are published.

In his Introduction, Peter Thornton made two important points: one that not a single museum in this country with a collection of instruments had a specialist musical instrument conservator on the staff, let alone a specialist in each type of instrument in the collection (I think in fact that the Russell Collection at Edinburgh is an exception to this), and second that the vast majority did not have a musicologist either (of the museums I know, six have a full time instrument curator: the Horniman and Fenton House in London, the Russell Collection in Edinburgh, the Piano Museum in Brentford, and the Bate and the Pitt Rivers here in Oxford; two have a part-timer, the Royal College of Music in London and the rest of the Edinburgh University Collection at the Reid. I don't know of any others; do you?). He also regretted that lack of a National Collection of Instruments, saying that London was the only capital city he knew of without one (there was no interest in London when the Galpin Society tried to establish one a number of years ago, though there was in Edinburgh; the reasons why the Society lost control and the intended nucleus became instead the Edinburgh University Collection of Historic Instruments are better not gone into).

I picked up these matters during the question period at the end of the day, pointing out that it was now probably too late to think of a National Collection (none of the present museums holding collections of instruments are likely to give them up to a central institution, and anyway there is little evidence that any central institution is interested - to take two examples only, the largest collection in this country languishes in the stores of the British Museum, mostly in those of the Ethnographic Department or the Museum of Mankind as it calls itself today, and the V & A itself has hidden away the superb collection of the old India Museum for many years now). I suggested, however, that it would be far more useful if there were a National Institution with a staff of specialist conservators whom we could all use. He made three rejoinders to this: one, the obvious one, that nobody had any money for such a purpose; another that perhaps CIMCIM could help to bring pressure for the establishment of such a unit (perhaps it can; would those of us who are CIMCIM members think about this? As he suggested, we, and everyone else who is interested, could also perhaps bring pressure to bear on the whole subject of proper staffing); and third that there were plenty of independent restorers around. To which I replied that that was a fair summary of the whole day's events: confusion between restoration and conservation.

APPENDIX: After the end of the Symposium, there was an EGM of UKIC at which it became apparent that, as an organisation, UKIC is more interested in conservators than in conservation. It is in process of turning itself into a professional institution, with as a result almost quadrupling the subscription rate (which has already quadrupled from £2 to £8 in less time than FoMRHI has more than doubled, from

£2 also to £5.50) to a new high of £30. The result is that non-conservators such as myself, who had joined partly as a museum curator without a staff conservator and who therefore ought to be in touch with conservation matters, and partly as a link between FoMRHI and UKIC, can no longer afford to belong to UKIC. It becomes more and more difficult for those of us who need to know about conservation, but who are not professional conservators, to keep informed of what is going on, and it will become very much more difficult for all those museums with no specialist on the staff. One possible remedy is for more instrument conservation material to appear in FoMRHIQ, and I would appeal to our conservator members to bear this in mind and to keep us in touch, not only with what is going on but especially on what materials and gadgets are available. It was, for example, in UKIC's Conservation News that we first heard of the card humidity gauges (see Bull.29, p.7) which, approximate indicators only as they are, are invaluable for use in small spaces, particularly in instrument cases. Perhaps, indeed, FoMRHIQ could replace Conservation News in our subject at least, as a place for reports on such gadgets and on the use of new materials, reports both favourable and of warning.

FoMRHI Comm. 502

Paul Gretton

Some Comments on Comm.477 (and thus indirectly on Bull.30,p.2; Comm472.;Bull.31,p.3 etc.)

Marvellous what a splendidly self-parodying reaction one can provoke with a bit of the old vituperous hyperbole. --- Eph as the paladin of "authenticity" with six-shooters blazing! I have no intention of getting involved in another of those tedious arguments about the ethics of musical authenticity which we've all heard before, so I will restrict myself to a few random nasty remarks:

- 1) At the risk of seeming to contradict what I wrote in Bull.31, p.7, I may say that I can go along with much of Eph's analysis and that I would consider myself committed, as he is, to something very like his "first approach". The point, however, is that I don't want D.S. or E.S. or NRI deciding for me/us what is or isn't "historical", "fake historical" or a "creative anachronism". FoMRHI must decide for itself what it wants to be and what it wants to print, even if that turns out contrary to its founders' wishes. I strongly believe that the pages of FoMRHIQ should be available for information about both egg-white(or somesuch) and plastic finishes. Then I/we can decide what I/we want.

As to Eph's last paragraph: Some recent comments in the bulletin seem to suggest that members' opinion as to what we are up to is indeed divided, as do some "Right on, man!" reactions I have had to the putting in of my little oar. I suggest Eph have a quick browse through the list of members -- even among those with the magic "F" before their name he will find quite a few who can by no stretch of the imagination be considered paragons of state-of-the-art authenticity (or indeed quality) either as craftsmen or musicians. Of those that I know a bit about, I would guess a majority in fact practise Eph's "second approach" regardless of what they may claim to believe. Far more than "a dozen instrument inventors" would have to "resign from membership" if the NRI line were to be consistently applied. Are NRI the only ones in step? I repeat: we must decide as a Fellowship how we want the Q to develop and what criteria of authenticity we want to apply.

- 2) It's not authenticity or the lack of it which is the main problem but rather all this rattling on about it. Like "patriotic", or "faithful", "authentic" is something one is (or isn't), not something one keeps bending one's colleagues ears about. Even the most "authentic" players, in my experience, generally seem to respect a maker in inverse proportion to the amount of time he spends going on about the authenticity of his work. ("Empty vessels..." etc) That's not to say that such players are enemies of the making and researching of historical instruments.

Most people "in early music" don't take FoMRHI anywhere near as seriously as it takes itself. I asked one prominent fellow why it is that so very few really eminent makers of historical instruments are members of FoMRHI. His comment was "Most of the 'serious' makers whom I know who are not members usually cite lack of time for all the nonsense as their reason for not being so." I myself have been teased in the past about being an active member by makers and players who wouldn't dream of joining for fear of being ridiculed* -- guilt by association. One hears that only a few of those who ask JM for the bump actually join, and most non-contributing members seem to subscribe because its not expensive and "you never know whether you might not pick up a few tips now and again among all the verbiage."

I hate to say it but, whether justifiably or not, FoMRHI has managed in its first 8 years to achieve the reputation in some quarters of "a lot of second-rate pedantic makers and lousy players going on about how good and professional they are -- not to be taken seriously." I don't say I necessarily agree -- I'm quoting a widely-held view -- but the tendency/danger is certainly there and if FoMRHI does "fizzle out" there will be a lot of people who won't miss it.

I for one have kept renewing my sub (although every December I wonder ...) and contributing pretty regularly not because I think FoMRHIQ is good or worthwhile as it stands but because the principle of a forum for the quick exchange of information is good (marvellous!) and worth working at. To be honest, however, I have become cynical even about that, having got far less out of the Q than I have put in. Of all the many requests for info or advice that appear only a few seem to produce even minimal reactions, whereas one knows for a fact that numerous members have at least some answers if they only cared to divulge them. Only a few fellows contribute and one hears that a lot of them don't even bother to vote on such subjects as the election of new fellows.

- 3) My original sarcasms (Bull.31,p.7) were occasioned specifically by DS's threat to edit out communications which don't meet her criterion of "authenticity". Her chosen examples included an article about a synthetic, spray-on soundboard lacquer. Now Eph tells me fibre-glass lutes and plastic cortols are sometimes allowable. But if a fibre-glass lute is acceptable in certain circumstances, so surely is a synthetic soundboard finish. Who is to decide? I stand by my remarks: "People in fibre-glass houses shouldn't"

(Sorry to take up so much space with another of those articles about rather than for FoMRHIQ, but I feel some things need to be said. Let's try to get our "Where are we going?" row thrashed out as soon as possible.)

Paul Gretton

Effects applicable to the tuning of instruments with a conical bore and rules of thumb for the tuning and voicing of historical wind instruments.

(Translator's note: The translation which appeared as Comm.457 was inaccurate, incomplete and unauthorized. The present translation has been checked by the author.)

Factors which determine pitch are:

- 1) The basic pitch is determined by the conicity of the bore in relation to the total length; end-correction and the width of the bore also have an effect.
- 2) The position of a given fingerhole, which gives a new length.
- 3) The size of a given fingerhole, which helps to determine the new length.

Further to 1:

The overall conicity determines the timbre and the potential volume of an instrument -- compare bassoon and shawm. Small alterations in the conicity, so-called chambering of the bore, have the above-mentioned function, but only to a certain extent. Such chambering is also necessary to enable one to play not only the fundamental in tune but also the overblown notes. For a particular instrument the overall conicity is more or less a fixed datum -- the timbre and ideal tone to be aimed at are pretty well standard in any given period.

Further to 2:

The position of a fingerhole is determined by the capabilities of the human body, such as arm-length, finger-stretch etc. The construction of the particular instrument is also relevant -- in a three-piece oboe, for example, a fingerhole cannot be placed at a tenon.

Further to 3:

With the exception of holes covered by keys, the size of a fingerhole is in almost all cases determined by the size of one's fingers and the hole's "feel" -- not too big and not too small. The size also has a lot to do with the sound of the specific instrument. Compare, for example, the traverso (holes ca.6mm) and the Boehm flute (holes ca.15mm). The effectiveness of forked fingerings requires a minimum fingerhole size.

If one has made a conical wind-instrument, either a copy or one's own design, and the intonation is unsatisfactory, then one has the following options:

I) Possible changes to an existing instrument.

- a: Enlarging a fingerhole
- b: Undercutting a fingerhole
- c: Enlarging (reaming out) the bore.

Further to a:

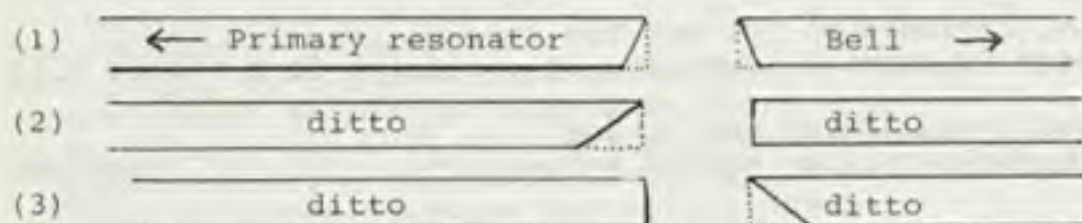
This raises the pitch of the note. The effect on the octave is greater than on the fundamental, i.e. one can raise the pitch of the octave more readily than that of the fundamental.

Further to b:

Undercutting is a particular means of enlarging a hole and is in fact also a way of widening the bore. Apart from making the instrument speak more easily by removing sharp edges, the results are as given under 'a' but the timbre associated with a smaller hole is retained.

Undercutting in a particular direction is a combination of:

- enlarging a hole
- widening the bore
- moving a hole



(1) raises the pitch of the fundamental somewhat and the octave more.
 (2) raises the pitch of the fundamental a certain amount and the octave also, but the relationship is shifted in favour of the fundamental. Nevertheless, the octave is always more readily sharpened.

(3) hardly alters the fundamental but the overblown note, i.e. the octave, is raised quite a lot. Undercutting was used mainly as a means of correcting the tuning and voicing.

Further to c:

Widening the bore. If this is done just before a fingerhole, as seen from the primary resonator (i.e. reed, labium, lips), then the fundamental is raised but not the octave. If the bore is enlarged just after and in the area of the relevant fingerhole, the opposite takes place -- the fundamental is hardly affected while the octave becomes sharper.

II) Possible changes in a following instrument.

a: Moving a fingerhole.

b: Making the bore narrower by altering the reamer. You can determine where you must do this by artificially constricting the bore with wax.

Further to a:

Placing a fingerhole higher (nearer the primary resonator) makes both the fundamental and the octave sharper, but the latter less so. By moving the hole down the bore one achieves the opposite result -- the fundamental becomes a bit flatter but the overblown note a lot flatter.

Further to b:

Narrowing the bore, when done just before a fingerhole, hardly affects the fundamental but the octave becomes higher. When it is done at and just after a fingerhole the fundamental becomes sharper while the octave is hardly affected.

All these remarks are only valid if the alterations are made independently of one another. For example, moving a hole only has the effect mentioned if the hypothetical fingerhole size remains the same.

We can set out this mass of data in tabular form for use in the workshop as follows:

- To sharpen the fundamental but not the octave
Solution: place the fingerhole higher and/or widen the bore before the hole
- To sharpen both fundamental and octave.
Solution: enlarge the hole and/or undercut hole and/or slightly increase total conicity
- To flatten the fundamental but not the octave.
Solution: place fingerhole lower and/or constrict bore before hole
- To flatten both fundamental and octave.
Solution: make hole smaller and/or reduce total conicity (narrower)
- To leave the fundamental unchanged while flattening the octave.
Solution: constrict bore at and after hole and/or place hole higher and reduce its size.
- To leave the fundamental unchanged while sharpening the octave.
Solution: under cut the hole at the side away from the primary resonator and/or widen bore at and just after hole.

Warning:

All the above-mentioned effects are quite direct. The consequences for timbre, for overblowing to the 3rd overtone, and for notes other than the specific one one wishes to influence have been left out of consideration and so will have to be determined experimentally. For example, constricting the bore of a baroque oboe just before the g/f sharp double-hole affects the response of the low e; the size of the tuning-holes has a marked effect on the intonation of the high b, etc.

The information I have presented here will therefore never be sufficient to design a complete instrument, but I believe that it can help to iron out some of the imperfections which occur in every copy.

How to make a baroque trumpet. (II) (Author's translation, revised by Paul Gretton)

Before I go on with the second part of my article on trumpet-making, I must make some preliminary remarks. After beginning my article I attended a course for trumpet players given by Heinrich Thein and others in Bremen. Thein has been making historical brass instruments for about ten years. At the course I heard about a number of different approaches to matters I had previously described. For example:

- Thein makes trumpets in which the bell-section and conical tube are made of one sheet of brass, so that they need no circular seam underneath the bell.
- Polishing with a mop gives too much heat, so the surface of the instrument is scraped with a scraper.
- To planish the bell with the planishing hammer a metal mandrel must be used. On a wooden mandrel you get the right shape but not the proper hardness and springiness.

With my thanks to him I am glad to pass these lessons on to you.

VII The garland

This ornamental part is not soldered to the bell, but the extreme edge is bent round the rim of the bell and hammered flat (fig.13). To make a rather shallow form it is very well possible to practise the technique of spinning. I did this to make the garland, just to try out the technique! The original method was probably hammering on the mandrel or on the anvil, starting with a disc of brass sheet.

Spinning is a process in which a disc of annealed brass is pushed against a mould which is rotating very fast (about 2000 rpm). I made a mould of pearwood. A disc of 0.5mm-thick brass with a diameter a little greater than the bell-diameter (120 mm) is tightened firmly between this mould and the tailstock of the lathe. Using a steel rod with a rounded point and a very long handle (about 60 cm), force and push the metal against the mould. To give enough pressure, use a pin on the support against which you let the tool work like a lever (fig.14).

The metal stretches a little at the narrow end and is compressed at the rim side. If wrinkles appear, tap them out with a wooden hammer on a piece of wood. When the brass fits the mould closely, polish and turn to the correct measurements -- some 3 mm wider than the diameter of the bell -- to form the "fit" rim.*

The garland is decorated in various ways. At the smaller end 18 shell motifs are chased. To reinforce the vulnerable bell a half-round profiled wire of about 3 mm is soldered to the garland. Engravings such as flowers, the name and mark of the maker and 4 cast angel-heads complete the decoration.

The shell motif is tapped into the metal with a punch made of tempered steel. The brass must be supported by a piece of lead when hammering the punch on the inside of the cup-shaped garland.

The punch is made out of a piece of 8 mm steel rod. The shell shape is filed in the end of it (fig.15). After filing and polishing, the punch is hardened by heating it until it is cherry-red and then quenching it in oil. The shell-motifs can be made sharper if necessary by embossing from the outside.

To make the rim wire for the bell a half-round wire must first be made. I filed a half-round hole in a 10 mm-thick steel plate.

* In other words, one must leave enough metal over to be able to form the rim overlap.

Then I clamped this plate against a flat piece of steel in the vice (fig.16). First anneal a piece of 3 mm round brass wire. Prepare this piece by hammering it into the the half-round hole in the steel plate. Anneal again and clamp both plates in the vice. With a good pair of draw-tongs, pull the wire slowly through the half-round hole. Tighten the vice and repeat the process. After about 5 times the correct form is reached. Then make another punch in the way described before, with the profile motif in its end (see fig 17). Tap in these leaf motifs one by one.

Engraving

Engraving is used to embellish the different parts of the instrument, mainly the garland, by cutting away metal from the surface in lines of varying width and section.

The tools are small bars of high-grade steel, hardened and with the cutting edge chamfered to make an oblique tip. They are set in a wooden handle, mushroom-shaped. I made some by using small strips of a machine-hacksaw, ^{blade} set in proper handles. The angle of the cutting edge for brass is about 50°.

Scribe the design on the garland, working on a suitable support which allows freedom of movement of the workpiece and the graver. Try to go and watch an engraver at work and then imitate him. This work is rather difficult so you must practise a lot.

The zig-zag line which was often used as an embellishment (fig.18) is made by moving a very small chisel forward with a constantly turning wrist.

Casting

In Brussels I made wax impressions of the angel-heads and of a part of the ball of a Kodisch trumpet. From these waxes I made plaster positives. A wax "sprue" (or "riser") was added to these and they were placed in a small cup. With silicon rubber I made flexible moulds. When the rubber had hardened I made an incision at one side with a scalpel so as to be able to remove the plaster positives and after pouring in molten wax also the resulting wax patterns. These were easily made, and after final touching-up to remove small faults I placed them in open-ended steel cylinders. The bottom edge must be sealed with modelling-clay where it rests on the base-plate, otherwise the investment would leak out. One must use an investment which will withstand high temperatures. (This is available from a casting-equipment supplier's.)

After pouring in the investment, tap the wall of the cylinder to get rid of most of the air-bubbles.

When the investment is hard and dry (after about a day) the wax must be melted out. I placed the casting-moulds in a kitchen grill and collected the "lost" wax. After about two hours I heated the moulds with a torch until the sprue opening became red-hot (±800°C).

Because of the difficulty of melting brass in such quantities, I put the fired moulds in a plastic bag after cooling to keep them dry (they are hygroscopic) and took them to a brass-foundry. It took only ten minutes for them to pour molten brass into the moulds. After about 5 minutes cooling they were quenched in cold water, causing the investment to disintegrate. The castings were touched up and after removal of the sprues they were polished.

Assembly

When the garland is ready the angel-heads can be soldered to its surface. Tin, silver or brass solder can be used.

The edge of the garland, which fits over the rim of the bell, is hammered thin on the edge of the mandrel (fig.19). Then the bell rim-wire is soldered on with silver solder. Paper-clips are used to keep it in the right place.

The small rings to fix the cords are made and are soldered to the bows (fig.20). Spread a film of tin in the back of the small plate. After cooling put a small amount of flux on the tin film. Bend the plate round the bow and bind it in place with ordinary household binding-wire. To solder you need only heat the two parts.

The garnishes are brazed to the ball. To get all three in the right position use a piece of plaster as a support if necessary, cast to the correct shape.

The rim of the garland is hammered round the extreme edge of the bell. One first bends it over on a wooden surface, working north, south, east, west etc. The rim is then flattened with the planishing hammer.

The yards and bows are connected in such a way that the end of each connection which is nearest the mouthpiece fits inside the next section (fig.21). One end is stretched and the other shrunk. The overlap is about 12 mm. The shrinking is done by hammering in on a 10 mm rod and filing thin. To stretch the end of the yard or bow one uses a metal cone, which is tapped into the tube. The metal is then hammered thin with a doming-hammer and filed from the inside. File one end of the garnishes a little bit conical on the inside so as to fit them tightly just over the connections. They are all made airtight with a little beeswax.

A maple block is made. To keep the yards in place I gouged two grooves in it. Cords are wound round the mouthpipe, spacer and bell-yard. A brass wire holds front bow and bell together, going through a little hole in bell and garland and the small ring on the front bow.

VIII The mouthpiece

The last word has yet to be said about the correct form of the baroque mouthpiece. What is certain is that the rim was broad and flat. The cup was almost semi-circular with all edges slightly rounded (fig.22). The first mouthpieces were built up from pieces of brass sheet. Later examples were cast and turned to the exact shape. On the Nuremburg drawing is a 17th-century mouthpiece, which I copied. I ground an old file to make a tool-bit, giving it the profile of half the cup (fig.23). After drilling the cup form roughly I made the exact shape with this profile-toolbit on the lathe. After polishing the cup I drilled the small hole in the middle of the mouthpiece. The outside was turned to shape and after removing the mouthpiece from the lathe the backbore was filed out. If this backbore is too narrow the distances between the overtones will be too small.

I realize that I made a lot of mistakes, both in making the instrument and in describing the process, but I hope that my experience will make it a bit easier for others to start making brass instruments.

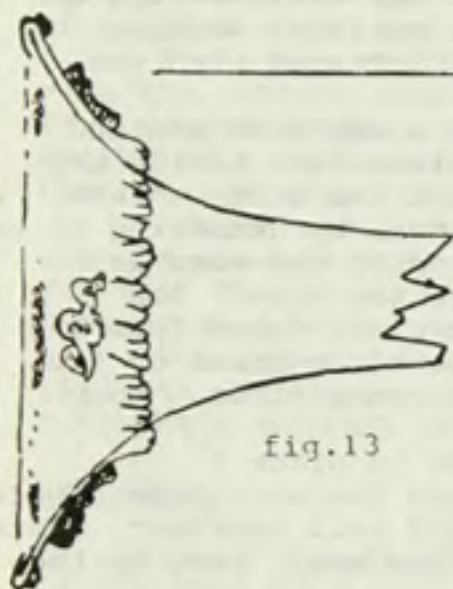
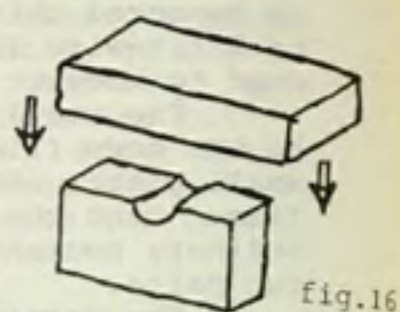
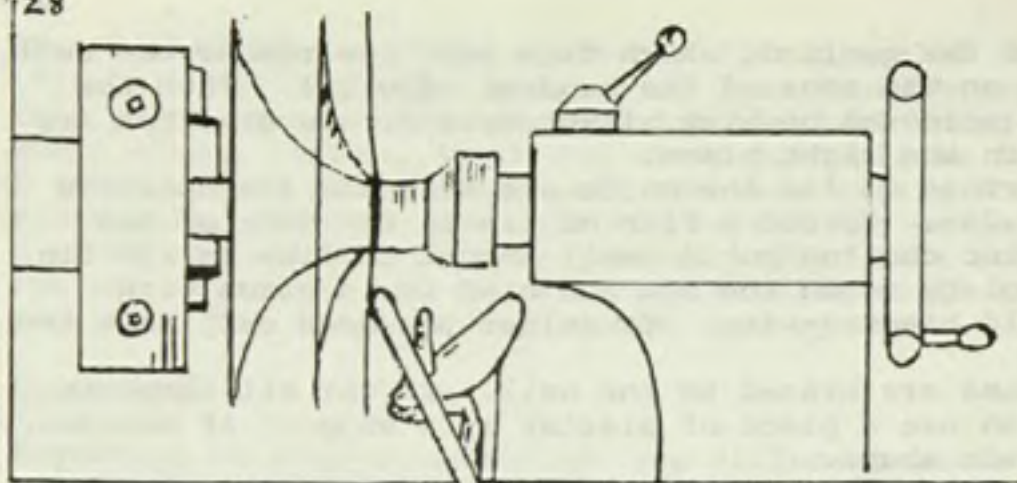


fig.14

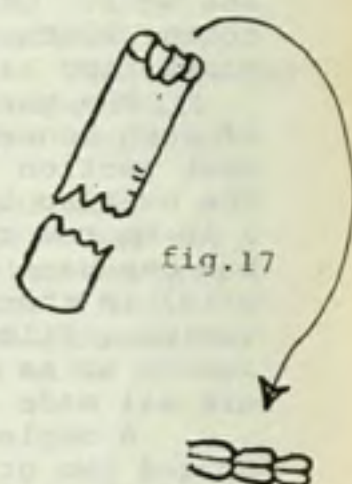
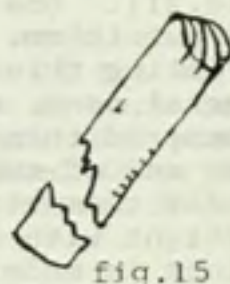


fig.13

fig.15

fig.17

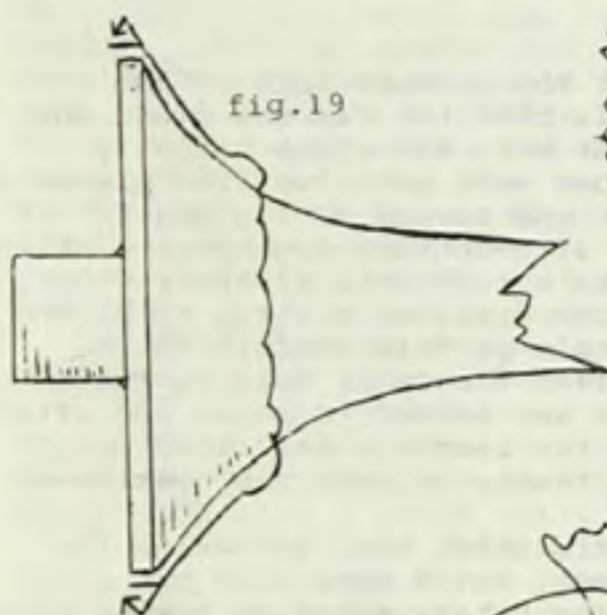


fig.19

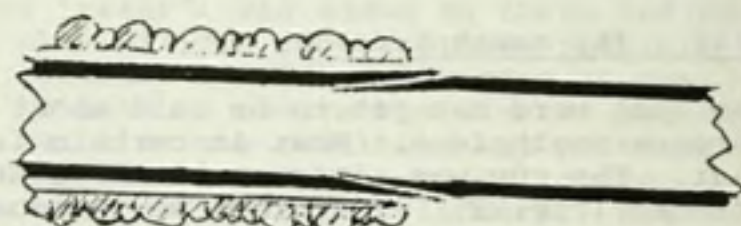


fig.21

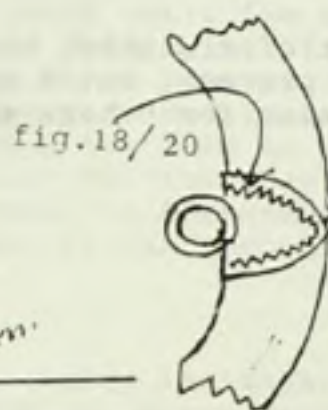


fig.18/20

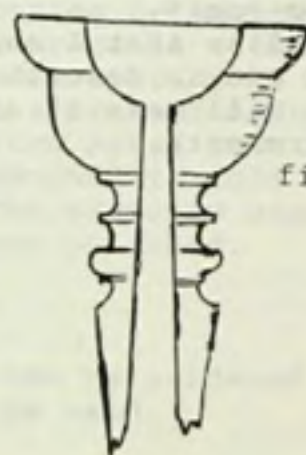


fig.22

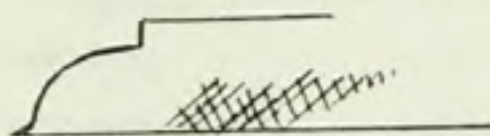


fig.23

FOMRHI Comm. 505; Comments on Comm. 483: Review of "Der Zink"
Robert Overton

The review in the July, 1983 issue of the FOMRHI Quarterly of my book, Der Zink, by Paul Gretton has recently come to my attention, and since the tone of the article can be termed, at the least, vitriolic, it necessitates some comment.

First, I would like to speak a few words in behalf of the people, who, because they have spoken favorably of the book, are caustically condemned to near professional lunacy. The comments and knowledge of several people were anonymously called into question by Mr. Gretton; however, I think we can safely let Dr. John Henry van der Meer, Curator of the Collection of Ancient Musical Instruments at the German National Museum, decide for himself whether his remarks concerning the book were "ill-considered" or not.

I am also aware of the multifaceted qualifications of Professor Emeritus Dr. Heinrich Hüschen and his colleagues of the Musicological Institute of the University of Cologne, both young and old, both within the specialty field of wind instrument research and without, and feel they have been unnecessarily and unjustly maligned by Mr. Gretton's impudent polemics.

I also deplore the devaluation of Dr. Georg Karstädt's pioneer work on the cornett, which was produced in a time of great political turmoil, which as stood the true test of time and which has been the basis for almost all scientific journals which have dealt with the subject. I freely acknowledge my debt to Dr. Karstädt's work, since we must all of necessity stand on his broad shoulders. Dr. Karstädt himself has a decidedly different attitude toward the book, and his well-considered opinion can be read in his review of the book to appear shortly in the German Musicological Society's journal, Die Musikforschung.

A further comment must be made in support of the publishers, B. Schott's Söhne. They, too, are not devoid of intelligence, and have in the past possessed and do presently possess sufficient musical acumen to have made them one of the foremost leaders in the world of musical publication.

A word about the small museums must also be included. Mr. Gretton sadly feels it a "waste" of time to visit such collections. He particularly singles out Copenhagen and The Hague (with its eighteen instruments mentioned in the book and its interesting collection of serpents, it would not be considered small by many others). Every collection, regardless of size, has historical gems which are worthy of study, and in the book, there is a concerted effort to acknowledge those instruments which are of exceptional interest.

Here, I would like to only touch on the experiences at two of the smaller collections, Copenhagen, which is included in the book, and the Württembergisches Landesmuseum in Stuttgart, which will be included in further publications.

It was my intense pleasure to have an experience in Copenhagen that few researchers will ever have, and which I count as one of the most exciting experiences that I will ever have in my life.

As I finished examining the cornetti in the museum, the directress brought me a small plastic bag with gauze-wrapped contents and said I might also be interested in it. It was, she related, an instrument that had recently been recovered from a

Danish moor, and having just completed a cellular preservation treatment that is often required of organic items found in the fens, it had been sent to her for comment by the National Museum. She said it was approximately 2000 years old. With rising anticipation and the utmost care, I unwrapped the instrument.

What I discovered was a dark-brownish animal horn -- due to the preservative elements in the fen -- with a well-formed mouthpiece and five finger holes.

A rush of thoughts went through my mind: from some knowledge of Germanic moor cultures, I knew that this was a highly mystical instrument of great symbolic value; it was slightly flattened from the ages in the fen, but was playable, and thus, a priceless acoustical treasure of Germanic history; it was concrete evidence of the continuing religious use of lip-reed instruments in the northern cultures beyond the lurs; because of the five finger holes, it was one of the oldest melodic lip-reed instruments known and was not dependent on the long tubing of the natural overtone series like the lur; and, because of the five finger holes, it was not playable with only four fingers of one hand, as some later paintings and folk instruments demonstrate, but required two hands on top of the instrument in order to be played. Thus, this instrument was a direct ancestor of the cornett.

I also realized with immense awe that I was the first person in 2000 years to play the instrument.

The Stuttgart museum has only four cornetti. However, three of them are ivory cornetti, and coupled with the excellent X-rays of the instruments that the museum has made, one can graphically compare the problems of straight boring at the mouthpiece end, and observe the results in sound of a faultily made bore. I am sure they are worthy of study by experts on ivory construction such as Eszter Fontana (re: "The Manufacture of Ivory Cornetti," Galpin Society Journal, Number XXXVI, March, 1983), or other interested builders.

Therefore, it cannot be said that a visit to a 'small' collection -- either in a personal or in a research sense -- is a "waste" of time.

Lastly, there must be a defense of those people who have read the book and have shown an obvious excitement over its contents. Mr. Gretton grouchingly admits their existence but warns of considering it "the" book on the instrument. He unfortunately belongs to a small group of cornettists who apparently believe that such a book can be produced. (I have at least six excellent books on the horn in my library, which frequently cover similar material with differing viewpoints, and their cumulative value gives a much wider concept of the instrument than any one of them alone possibly could.)

As I related to Mr. Gretton before publication of the book, I see this effort as a beginning, not a be-all and end-all, and that if it can produce enough sympathy for the instrument, that others would want to enter the field of cornett research, then it would have been successful. (As of this moment, there are, to my knowledge, three university dissertations being prepared on various aspects of the cornett, one in France, one in Germany and one in Austria, that are directly related to the appearance of the book.)

When one has waded through Mr. Gretton's comments (a review

of what is in the book does not really surface), one asks what he has achieved. He has found some orthographical errors, some known to me beforehand and others that are new, and as any author is, I am glad for the information. However, I must question Mr. Gretton's ability in the German language. Only five examples will be brought here to demonstrate this thesis.

First, he reprints two bore constructions in his opening comments and would have the reader believe that in doing so I was demonstrating that "some (cornetts) had a cylindrical bore." Such a statement as this does not exist from me. These drawings are taken from a discussion of the construction of the bore and the formulae for the cornett, and are to show two differing beginning bore types which resulted in differing sounds and differing formulae. This section does not express, directly or by implication, Mr. Gretton's faulty translation of the German language.

Secondly, in footnote 50, subsection P. 89, he feels that there is a discussion on page 89 of learning the cornett. This is not so. It is a discussion of what qualities a good cornettist should command, and mentions good hearing qualities, as well as accurate coordination between the tongue and finger movement. To discuss beginning the cornett would demand considerably more space than one paragraph.

Thirdly, in discussing the Bernwardsäule or Bernward's Column, he remarks in a footnote (no. 37) that one "could" take a phrase "to mean that Bishop Bernward constructed the pillar himself." One 'could,' but if one had read the paragraph preceding this, he 'would' not have. (Mr. Gretton attacks the conclusions of the significance of the cornett portrayed on the Bernward-Column. However, since I was granted permission by the Cathedral to inspect the instrument on the column at close proximity, my conclusions stand.)

Fourth, on page 53, paragraph three, Mr. Gretton believes to have read that "embouchures were left or right-handed depending on which side of the musicstand or church the player usually stood." On page 84 of the book, which is the section he refers to, the second paragraph's first sentence reads: "When one compares the early manuscripts for placement on the mouth, one finds that the direction of the instrument is more important than the question of where the embouchure lies." There follows a discussion of the cornett as an instrument of reflected sound, and says that this concept could help explain the abnormally high number of left-curved cornetti found in the museums.

In the same paragraph, he makes an aside which, in my opinion, alludes to a lack of information in the book on the hand position of the cornett, whether for right-curved or left-curved. There are numerous places where the positioning of the hands is discussed and even goes so far as to discuss two instruments which graphically demonstrate the flexible nature of the varying hand positions. It also discusses the fact that both the right- and left-curved cornetti are shown being played with every conceivable variation of embouchure placement.

Fifth, in footnote 69, he says that I "dispute the authenticity of the mouthpiece of the Vienna instrument 230 (-A241, -4076), which is generally accepted as being an original." I do not

dispute the originality of the mouthpiece, rather on page 121. I questioned the close association of the mouthpiece with the instrument due to poorer seating qualities.

On the subject of mouthpieces, Mr. Gretton mentions that there are very few accepted as being 'historically' accurate. I agree, although the word, 'historical,' is rather open to opinion of just when this period was. Then, in footnote 69, he calls some of the mouthpieces depicted in the picture section and described in the measurement section as being "positively bizarre." If this factual reporting of data found in museums offends his sense of 'purity,' then he had best not inquire into the variety of mouthpiece sizes on the tenor cornetti or, even more disturbing, the serpent mouthpieces.

Some cornett mouthpieces that do not fit the traditional 'acorn' form were nevertheless used on cornetti. If he would look at the variety of hand positions and embouchure positions, and read the lives of the cornettists, he would discover that the cornett was a hard-working instrument, and that the cornettist, who was also frequently required to play other instruments, was often less concerned with 'tradition' than with practical performance.

The bulk of Mr. Gretton's comments deal with where he thinks the book should have gone and dismisses the real direction of the book with a deprecating one-liner. He belongs to a small group of cornettists who apparently believe that their seal of approval must be obtained before any work on the subject can be accepted as valid.

I have told Mr. Gretton and others of this circle in conversations prior to publication, that, for many reasons, the book dealt primarily with German-speaking sources. It does not avoid Italy, but after arriving in Germany and seeing the large amount of research material still to be obtained (and for not inconsiderable linguistic reasons), I decided to concentrate my efforts in that direction. The massive amount of written information from the 15th-19th centuries that has been added to the consciousness of the musical world is evidence of this endeavor. There is still much information simply waiting to be uncovered. One such plum is the medieval city of Dinkelsbühl, which has survived intact the extreme ravages of the Thirty Years' War and World War II, and whose archives on city musicians have never been touched by a musical researcher.

Mr. Gretton's remark on the extraneousness of the Roman mouthpieces is also interesting. In writing any history of European lip-reed instruments, it would be rather difficult to proceed without mentioning the Roman instruments. However, there is an even more pertinent reason for the inclusion of these particular mouthpieces which seems to have escaped him.

They are as finely crafted as many metal mouthpieces in the 20th century, and the ones in the Saalburg and the lituus from Neuss have a remarkably close resemblance to the 'acorn'-style of the cornett. The presence of a mouthpipe and a cornu mouthpiece in the large military post at Xanten are evidence that the Roman instruments were not always built as a complete unit of mouthpiece and sounding body.

When these facts are placed in conjunction with the knowledge that all three places mentioned were at the extremities of the Roman/Germanic frontier, and the fact that the Roman garrison

soldier was frequently recruited from the surrounding area and was often required to serve from ten to twenty-five years, the conditions for cultural exchange and adaptation of cornett-like instruments are fully realized. Thus, an instrument with the improved mouthpiece construction of the Romans and the more compact, melodically oriented finger-holed horn of the Danish moor would not only become a possibility but could modestly be placed in the realm of probability, and a cornett-like instrument with an 'acorn' mouthpiece, whether removable or built-in, could have evolved.

Hence, as has been noted, Mr. Gretton's remarks on the extraneousness of the Roman mouthpieces and the Germanic areas is surprising.

The German-speaking areas were also where the cornett survived longer than in many other places, and to inspect the decline and survival is of moment, whether it be the report of the testing of the young Georg Friedrich Zahn in February, 1801 in Rothenburg o. d.T. in which he had to perform adequately on the "Zinken, Alt-Tenor- und Baß-Posaune," the "Trompete- Horn- und Clarinetto" and the "Violino" -- he failed not because he was incapable, but because he was too young! -- or whether it be the late 19th century poem of Detlev Freiherr von Lillencron, "Die Musik kommt." This poem is the last known 19th century musical usage of the word, Zink, in the German language.

In 1901, the poem was set to music by Oscar Straus and became a standard song in German schools. It was recently recorded by the Austrian singer, Peter Alexander, who has an extremely wide following in German-speaking areas, and Mr. Gretton can hear the song on the cassette: Das Wunschkonzert serviert von Peter Alexander, Ariola Records, Number 68 366 4.

Thus, for Mr. Gretton to dismiss the direction of the book as unimportant is to not fully grasp the long history of the instrument or to completely comprehend its broad European usage.

Mr. Gretton and others of his circle would have the book be concentrated solely on Italy (in our conversations, I remarked that I feel Italy deserves an extended research project by an expert linguist in Italien, and not just a concentration on a few cities and one era). However, in a very interesting exchange of letters with Prof. Macario S. Kastner of the Portuguese National Conservatory, Lisbon, I have also been made aware of the need for a much stronger inspection of cornett usage on the Iberian Peninsula. I am also positive that an extended study could be made of the British usage alone.

What seems to rankle Mr. Gretton is the noninclusion of some of his 'stars.' However, one may justifiably place Augustin Schubinger, Master of the Cornettists for Emperor Maximilian I, who not only played for some thirty years but also travelled widely throughout Europe, in the discussion of 'star' performers.

Mr. Gretton would also have one believe that his favorite performer, Girolamo Dalla Casa, was included unknowingly in my book. However, if he would read the entry closely, he would find that "Hieronymus von Udine" left Munich for Prague in 1566, and never arrived there. Girolamo Dalla Casa, on the other hand, was first employed in Venice on January 29, 1568. If Mr. Gretton wishes to consider that -- with this gap in time -- the men are identical, then he should be delighted with the expansion of knowledge of his prized player.

This is the second review from this group that has heatedly raised the Dalla Casa point. The other, in German, was in the same shrill manner as this one, with some even more interesting misinterpretations. The German review and Mr. Gretton also both remark on the frequent appearance of the firm, Musica Rara, in the literature list. In attempting to give publishers of works wherever possible, this firm may have appeared more often than others, but only because they seem to have published more works for the cornett than other companies.

In this connection, Mr. Gretton scoffs at an instrumentation of "Zink, Violen, Triangel" in the literature list. He may find this instrumentation on the recording of the mid-17th century dance, Witany, from the record Pieśni, Tańce i Padwany, by the Fistulatores et Tubicinatores Varsovienses, whose director is Prof. Kazimierz Piwkowski of the University of Warsaw, on the record label, Muxa -- Polskie Nagrania, Number SXL 0612.

Mr. Gretton apparently also does not like the description of the construction of the cornett. As the largest producer of cornetti in Germany, Dr. Hermann Moeck was kind enough to allow me to observe his building process and to make photographs. If Mr. Gretton does not like the description of this experience or the selection of photos, so be it.

He also mentions the 'lack' of contact with two cornett makers in the immediate area. There are more than two; however, I am sure he means John Hanchet of Essen, who prefers to call himself a "Specialist Maker and Researcher" of shawms and crumhorns, but who does make excellent mute cornetti, and John McCann, formerly of Bonn, now of Benicia, California. In discussions with John McCann, I became aware of his truly exemplary efforts to achieve a historical instrument -- he probably knows more on the boring and construction of Italian cornetti than anyone alive -- but I also became aware of the reluctance of makers to find their 'trade secrets' in print. (Mr. Gretton makes mention of the need for a study of the leather tooling on the instruments. John McCann, I am sure, could produce an excellent discussion of this topic, to which he has devoted considerable time and thought.)

The measurements of instruments in museums is also held up for scorn. Nevertheless, it was exactly this part in which Mr. Gretton and others of his circle showed the most interest before publication. At that time, I had been warned by good authority to have the utmost care with the contents of the paper. Mr. Gretton graciously agreed. However, a photocopy of this section (and others) was obtained shortly prior to publication without my permission. Then, only a short time later, while continuing my study of other instruments in other museums for further publication, I discovered that others were now measuring instruments with a system remarkably like mine, whereas before no such system had appeared. It would seem, with all due modesty, that imitation is the ultimate compliment.

With his parting remarks, Mr. Gretton would like to coerce the readers of your quarterly to ignore the book and to try to coerce the nonpublication of an expanded English version. I will persevere, and allow your readers to be able to judge for themselves. If Mr. Gretton is repelled at the thought, he does not have to read it.

In closing, I would like to quote a better writer than I, but one who obviously felt himself to have been in a similar situation. In writing to Count Alexandrowitsch Grigorij von Stroganoff, Wolfgang von Goethe remarked: "(Er) preist oft die Fehler, worüber wir erröten, und verhöhnt die Tugenden, welche unser Stolz sind."

FoMRHI Comm. 506

by E. Segerman

Eighteenth Century Success of Copal Varnish

I found the following article while browsing through an old book a visiting friend showed me. Its title was "Annual Register For the Year 1771". I then duplicated the relevant pages.

Unfortunately, I did not seriously look elsewhere in the book to discover whether any authors were listed, so I give the attribution as "Anon?".

It is included here because interest in copal varnishes has been shown by some members, and also it may shed some light on the transition from the "old master" varnish to the later copal type, which we today consider to be inferior. Martin's varnish, "which has made so much noise in London, these 20 years past [i.e. since around 1751]" could have become equally as popular elsewhere in Europe. This success may have been a crucial factor in that transition.

For the YEAR 1771.

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of Chio or Cyprus turpentine; let it dissolve till it is fluid; then pour into it eight ounces of amber finely powdered and sifted; mingle it well with the fluid turpentine, and set it on your fire for a quarter of an hour. Now take off your pot, and gently pour into it a pound of Copal, finely bruised, but not powdered; stir these well together, and add four ounces more of your Chio turpentine, and a gill of warm turpentine oil. Set it again on your fire, blowing it a little brisker.

When it has been on your fire about half an hour, take it off, open your pot and stir them well together, adding two ounces of the finest and whitest colophony. Set it again on the fire, adding a greater briskness to it with the bellows, and let it remain till all is dissolved and fluid as water. Then take off your pot, remove it a little distance from the fire, and let it stand a few minutes till the effects of heat is somewhat abated. Then, have ready by you twenty-four ounces of poppy not, or linseed oil, made drying; and pour it into your dissolved gums, by degrees, boiling hot, (but let that be boiled on another fire, at a little distance from that you melt your gums over) stirring them together with a long deal stick. When you have thoroughly incorporated your fluid gums and oil, set them over your fire for a few minutes, still stirring it about, till it boils once up; then take it off, carry it to some distance, and pour into it a quart of turpentine made hot over your second fire. Stir all this well together, and give them one boil up; then take it off, and pour into it a pint more of turpentine, made hot, still stirring it well. If your

gums are thoroughly melted, and you have incorporated them well, your varnish is made.

Let it now stand by to cool; and when it is become only lukewarm, strain it through a close cloth into another vessel, and if you find your varnish too thick, thin it with oil of turpentine, till it is only the consistency of linseed oil. Strain it a second time, then bottle it for use, and let it stand a month, at least, before it is used.

If this varnish is made with care, your fire brisk, neither your gums nor oil suffered to burn, it should be as clear as amber beer; which is as fine as any Martin ever made with an expressed oil.

The disagreeable smells arising from the melting of the gums, and the very great (spoke) arising from them, make it proper to be done in a yard or open place; a frequent repetition of making this varnish requires it; otherwise a confined place will be very prejudicial to the health of the maker.

This is the actual Copal varnish, as invented, made, and used by Martin, and which has made so much noise in London, these 20 years past.

The manner this VARNISH is laid on, and the Method used to rub down and highly polish the same.

When your piece to be varnished is finished painting (whose colours should be layed on as smooth as possible) let it stand till it is perfectly hard, lest you rub up the painting by varnishing, before it is dry.

Let your varnish be only of the consistency of oil, otherwise it will be too thick for you to work it freely.

Varnish

The true Receipt for making COPAL OIL VARNISH, or what in France is called VERNIS MARTIN.

LET there be made a large earthen pot with a cover; let the shape resemble a chocolate pot, with a handle to it; the cover must fit on exceedingly close, and the vessel be large enough to hold a gallon, and well glazed inside and out. Care must be taken this pot is exceedingly strong, and not cracked when set on the fire, lest it should burst and fire the gums and oil, which may be attended with dangerous consequences, and for the better safety should be done in an open place.

Let your melting-pot be warmed, and then pour into it 4 ounces

Varnish your pannel smoothly over, and let it stand by till quite dry; then varnish it over again, observing to pick off any little hairs or grit that may have fallen on it. When you have varnished over the work half a dozen times, let it stand by two or three days till it is thoroughly dry; then take fine pumice-stone, powder and sift it finely; and with a wet coarse rag, dipped into it, rub down your pannel, till the streaks of the brush and all kind of blemishes are removed. When you find your painting to be perfectly smooth, and all of one surface, wash off and dry your pannel well, then varnish over your work again, repeating the course of varnish, till you find you have a sufficient body; which for smooth painting will not take more than ten or a dozen times. This done, and properly hardened, rub it down a few minutes with the powdered pumice-stone as before. Clear and wash off the pumice-stone as soon as you find it has taken off all the blemishes the varnishing may have received; then take fine emery and give it a course of rubbing down, till your pannel bears a surface smooth and even as glass. Now dry off your emery, and take powder of fine rotten-stone, nicely sifted, and with your wet rag rub it some time, till with the palm of your hand, rubbed two or three times in the same place, your pannel discovers a gloss, equal to glass; this done, clear off your work, and dry it clean; then with another rag, or bit of flannel, dipped in sweet oil, rub your painted board a few times over, and then clear it off with fine dry powder,

or flour, and your hand; and a piece of fine flannel dipped in your flour and rubbed over it, when cleared of the oil, will give it a lustre, as though your painting was under a glass, and the surface equally as smooth.

This is the exact manner used to polish all things varnished in oil varnish; and such ware (I before observed) as can, should be set in a warm oven, between every coat of varnish given; and in chambers where large work, as equipages, ecuiries, and cabinets are varnished, they should be gradually heated by stoves. Martin had a method on hot and sun-shining days, of drawing out his voltures to receive its heat; but I can by no means approve of such a method, as I observed to him the quantity of little flies and other insects that settled on them, were difficult to take off again; and the sudden winds often covered them with dust; while a close chamber warmed by stoves, or the windows opened with canvas before them, must I think be the most eligible method of keeping the work clean, and drying it better.

THE AMBER VARNISH.

Melt eight ounces of chio turpentine, and when fluid, pour into it a pound of fine powdered amber; let it be poured in by degrees, stirring it all the while to mingle it the better; and when it is properly mixed, let it on your fire for half an hour, then take it off, stir it well about, and add to it two ounces of the white colophony. Put it again on your fire,

stop

For the YE

stop up the cover close, raise the fire, and blow it very brisk: an excess of heat must be used to melt the amber, which done, and all perfectly fluid, take it off and let it cool a little at some distance.

Now pour upon your melted gums a pound of your prepared linseed or poppy oil, made drying, and poured in boiling hot, stir it well together till it is perfectly incorporated with the gum, then by degrees pour into it a quart of turpentine made hot as before, stir it all well together; let it cool, and strain it off for use; if this is properly made, it will be clear as porter beer. If any should think the chio turpentine is put into this varnish in too great quantities, and may be liable to crack, let it be remembered, that the exceeding toughness of the amber, will not let it melt clear, any other way, than by dissolving it in the turpentine, nor will that quantity remain to mingle with the varnish, but will at least half evaporate. Amber can only be dissolved clear, by melting it in some less platinous gum, and of an easier dissolution.

Orphanion News

We've heard about a 9-course orphanion in the Braunschweig Municipal Museum. Peter Forester and Ian Harwood are chasing down information on it.

ForMRI Comm. no. 507 A Lunatic Crumhorn

D. Z. Crookes

Hitherto the crumhorn body has been either one-piece and steamed or three-piece and mitred. The new lunatic version described here requires neither steaming nor skilful mitring. It suffers from neither the slightly constricted bore of the steamed instrument nor the sudden changes of bore-direction unavoidable in the mitred one. How long it takes to make depends on whether you use standard or instant Araldite. To make the tenor crumhorn, turn up a windcap and cap mounting in the usual way. For the straight part of the body turn up a cylinder of maple 13" long, 1" diameter, pierced centrally with $\frac{1}{4}$ " bore. Fit the mounting. Now prepare about 4' of maple lath 1" wide and decreasing in thickness from $\frac{3}{4}$ " to $\frac{1}{4}$ ". (The easiest way is to use a planing machine: your local technical college will probably help.) Cut this lath into 1" lengths to give yourself a supply of wedges 1" x 1" x $\frac{3}{4}$ " \rightarrow $\frac{1}{4}$ ". Drill each wedge centrally with a $\frac{1}{4}$ " bore. Holding the straight part of the body cap end down in the vice, glue one of the wedges over it

continued on p. 56

I want to consider the large Greek kithara of c.500 - 300 B.C.. What I have to say takes the form of a commentary on six illustrations which interested readers will be able to find without difficulty: each of these I denote by a bracketed letter, as follows:

(a) Kalyrna stater, c.520 B.C. — shown as no. 31 on p. 32 of G.K. Jenkins, Ancient Greek Coins (London, 1972).

(b) Delos didrachm, 525 - 500 B.C. — shown as no. 40 on p. 34 of Ancient Greek Coins.

(c) Amphiktyonic Council stater, 336 B.C. — shown as no. 269 on p. 121 of Ancient Greek Coins.

(d) Chalkidian League tetradrachm, c.410 - 400 B.C. — shown as no. 217 on p. 100 of Ancient Greek Coins.

(e) Vase-painting, n.d., but said to be of the "Classical Epoch," reproduced as plate VIIa in C. Sachs, The History of Musical Instruments (London, 1942), facing p. 128.

(f) Vase-painting, c.480 B.C., reproduced as an illustration in J.W. McKinnon's "Kithara" article in New Grove.

Let me preface the commentary with a summary of the main differences between the kithara and its simpler cousin the lura. (To help readers unfamiliar with the whole subject I include one illustration of a lura — (a) — among those chosen for commentary, and print below sketches of each instrument in its typical form.)

Lura

Resonator Either the shell of an animal, usually tortoise, or a small bowl made of wood or metal, covered with a skin belly.

Arms Tenuous and simple, with no real resonating functions: either two long, thin horns (e.g. those of an antelope), or two lengths of wood or metal.



Yoke A wooden rod, frontally attached, whose ends do not usually project much beyond the outside of each arm.

(In many ways the lura is to the kithara what the Chinese erh hu is to the European viol, or what the medieval bladder-pipe is to the Renaissance crumhorn.)

All the usual caveats about deductions based on depictions apply to the following commentary. The reader is strongly advised to hunt down the illustrations before reading it (any good public library will have them all, and will make private study photocopies of the whole lot while you wait for less than 50p.).

(a) Stylized rear view of a lura set on an incuse lyriiform ground to give a three-dimensional effect. The resonator is a tortoise shell, and whether or not the arms are actual horns they are certainly corniform. The yoke is attached to the front of each arm, but there is no sign of any binding or pining at the rear. What may be the belly's turned-down edge shows no trace of stitching or binding. Seven strings meet seven rolls on the yoke, which — unusual for

Kithara

Resonator A large wooden chest with a vaulted back and flat soundboard.

Arms Strong and of elaborate shape, usually with two bouts on the inside of each arm. The arms appear to grow out of the body, are often hollow, and in those cases are really extensions of the resonator.



Yoke A wooden rod, frontally attached, whose ends project externally for some distance and terminate in a disc. (Could this disc in some cases have been a little suspended cymbal?)

the lura — projects noticeably on either side.

(b) Rear view of a kithara with a vaulted back that peaks sharply to meet the apex of the body (once again, the effect is three-dimensional), and whose curved surface extends up over the arms as far as the yoke. Each arm, up to the yoke, appears to be hollow on the outer, corniform section, and solid on the inner section (viz. the bouts), and in overall appearance suggests a horn with a noticeable keel, like that of a young ram. Only at the left side can the yoke, the nature of whose attachment is unclear, be seen to project. I think I see eight strings. How they're attached is hard to say: if rolls are indicated then they're nowhere near as chubby as we should expect. Each arm bears a circular boss or ornament immediately under the yoke. The absence of any obvious join between body and arms inclines me to think that the kithara depicted was made of metal. I adduce for comparison

(i) the silver lyre from Ur illustrated in e.g. Westminster Dictionary of the Bible (London, 1944), p. 56;

(ii) the extant bronze lyre-chest referred to by J.W. McKinnon in his "Lyre" (2. Ancient Greece.) article in New Grove;

(iii) Iopas' cithara...aurata in Vergil, Aeneid I. 740 - 741.

(c) Rear view of left arm and most of yoke of a large (cf. seated Apollo) kithara. Six rolls are visible on the yoke, whose projection ends in a pommel. Below the line of the yoke a circular boss appears on the arm, whose extremity seems to be mounted with a plinth-moulding. The upper (and only visible) bout is sharply rostriform, and doesn't look like an integral part of the arm. Aside from the possibility of stylized depiction, which I don't honestly think can be posited in this case, two questions suggest themselves. Is the bout simply an attached ornament? Or is its upper jaw actually a knobbed lever which enters the arm and acts upon the yoke? (I have in mind the lever of which Sachs speaks — op. cit., p. 130 — but such a lever would surely not be found on a kithara fitted with string-rolls.) The circular boss and rostriform bout combine to give a somewhat zoomorphic effect.

(d) Front view of a kithara whose flat soundboard surface seems to extend halfway up each arm. The line separating the lower (and lineally corniform) part of each arm may be merely decorative, but it is much more likely to denote a body-arm join, whether spliced or mortised. Now a difficult question. Look at the area between the inside line of each lower arm's "horn" and the conjunction of the two bouts. Is this area wooden (viz. part of the arm), or is it simply fresh air? If the second, then do the upper bout and the lower bout's upper jaw together constitute a sprung metal load-bearer, whose function is to pass strain away from the body-arm join down to the body itself? Or is the upper bout's lower jaw the handle of some kind of sprung lever? Once again, as with (c), circular boss + upper bout = zoomorphic effect.

Seven strings pass from a frontal string-holder to seven rolls on the yoke, which is held in two externally oviform sockets mounted frontally on the arms. On each side the yoke projects for some distance to end in either a knobbed disc or a disc retained by a knob. The bridge tapers noticeably from right to left, and to my mind must be a piece of horn. (In classical Greek, incidentally, κέρας (= the standard word for horn) can denote the bridge of a lyre: vide Sophocles, Frags. 232.) A decorative band runs diagonally across the left of the soundboard. The bottom of the soundboard (in fact, may we assume, of the whole instrument?) is strengthened by an externally mounted moulding. Under this there appears a V-line which can only be interpreted as showing the bottom of a vaulted back.

(e) Front view of a large kithara, most of whose right arm is hidden by the player. A strap can be seen crossing the left arm — cf. (f). An L-shaped line in the soundboard's top left corner must indicate the body-arm join.

What are the two roughly triangular areas above and below the upper bout? The same question arises as with (d): either they're painted wood or

else they're fresh air. If they're fresh air then the upper bout must be a floating load-bearer, probably a casting, which touches the inside of the arm with the arc of its C, and which is connected to upper and lower arm by springs (= the two thin white lines, the upper of which looks like a back-to-front J). May it also have some function as a lever operating on the yoke? Sachs thinks of the lever as having "supplanted the old...rolls," and tells us that it "lifted the crossbar, thus tightening all the strings at once." Now the yoke on the seven-stringed (e) is devoid of rolls, so the lever idea seems very attractive — until you think about it. What lever under heaven will requisitely tighten, viz. tune, seven strings all at once?

I prefer to think that what looks like a string-holder (there is no sign of the strings being attached to it) is really a lid that covers seven tuning-pins — cf. the later kithara, e.g. that of the Vatican Apollo Musagetes. I suggest that the yoke — surely too slender here to be made of anything but metal — is pierced with holes in which the strings are held by knots. The yoke seems to be attached frontally, and projects a little to end in what may be a disc. On the arm below the yoke appears a spiral decoration, apparently painted. There are definite signs of feet on the left side of the bridge.

(f) Front view of a large kithara. At the top of the body the painter has tried to show the soundboard's junction with a vaulted back — which does not peak towards the soundboard's apex, as we should expect (cf. (b)), but actually valleys. If the depiction is accurate (let's coin a new technical term, "camel-vaulted") we must conceive of the valley as an easement for the player's left hand. But I don't believe that it is accurate: it's simply not well drawn. I suggest that the painter meant to indicate such a vaulting as (b) possesses, and that the ill-matching upper bouts, the orpharionesque offset yoke, and the crudity of the circular ornaments are matters of inaccuracy. What of the bottom string, apparently taken past the string-holder and mounted separately? Was this string so thick and strong that it had to be treated like the bottom string of Praetorius' gargantuan double bass (Sciagraphia, plate V, no. I)? More likely what we have here is a slip of the brush. The strings are attached to the yoke by what look like tuning-pins, certainly not like rolls.

In the cases of (d) and (e) we have wondered whether certain areas, certain spaces, were parts of the arm or merely fresh air. The question is solved by (f): since the player's garment is seen through part of the space at issue on the right arm, and black background is seen both through the rest of this space and through all of the corresponding space on the other side, we have to do with open air, and the upper bout must be a sprung load-bearer. We are given a fair idea of the construction of the arms. Each arm is made in two pieces: the lower (corniform) piece is joined to the body exactly as in (e), while its other end meets the upper arm-piece in a wedged joint. Some strain is taken from this joint, and communicated to the body, by the load-bearing upper bout.

What is the black rectangular area in the plectrum's plucking zone? It cannot be a sound-hole. Is it not most likely to be an inlaid plectrum guard made of horn? And if so, can we deduce that the soundboard is made of soft rather than hard wood? Did the Greek instrument-makers of this period know the advantages of pine bellies? I should not be surprised if the luthiers of a people whose builders created the Parthenon knew about things like this.

* * * * *

(To be continued)

David Z. Crookes

CONJECTURES ABOUT MAKING HARPSICHORD BENTSIDES

Many years ago, I encountered the sprung-in-place bentside concept on 17th Century Italian harpsichords. The bentsides were only 4mm thick and could relatively easily have been nailed and glued into position. We know this because in one restoration, the bentside had to be removed, and it immediately straightened out (even after 300 years); furthermore, we used this technique for making reproductions of Italian harpsichords. Recently, I examined an unsigned clavicytherium in the Metropolitan Museum of Art in New York, and it too had two bentsides which had obviously been sprung into place, even though they were approximately 8mm thick. The clavicytherium bentsides had curvature along their entire length so that the instrument was wider at the top. My conjecture is whether more massive harpsichords could have been made in this manner as well as those with thin bentsides?

In mechanics, it is possible to show that for a constant bending moment on a beam of rectangular section that the radius of curvature is inversely proportional to the cube of the beam thickness. If we consider a typical bentside such as a 1765 Blanchet, its radius of curvature varies from about one meter to straight. The Blanchet bentside was peculiar in that it was thickest in its midlength; i.e., at the tail it was 1.55 cm. thick, at midlength 1.87 cm., and at the cheek 1.69 cm. If we assume that material was planed off the thickness of the tail end, the original plank could have been as much as 2.30 cm., the thickest piece of wood on the spine side (or even more). Thus, the change in curvature from one end to the other could vary by the cube of $1.69/2.30$ or $40/100$. The nice thing about this technique is that a large variation in curvature is possible with only modest thickness variation, and that no form is necessary for making the bend as many modern makers use.

If we assume a Young's modulus of 1.03×10^6 Newton/cm², it is possible to show that a tension of 1.1×10^5 Newtons (242 lb.) and a one meter lever arm is sufficient to produce the desired curvatures. This type of force is easily within range of a twisted rope and stick kind of system.

Therefore, the conjectural method of bentside manufacture is to plane a plank of tapered thickness, soak it, and then to apply an end to end bending moment to it via levers, finally allowing it to dry in the bent condition. The excess wood is planed off later, possibly even after joining the corners of the instrument. I would be pleased to hear from other members whether they have ever attempted such a technique, or whether they can furnish objective evidence that such a technique was used in the past.

R. K. Lee

1983 FoMRHI List of Members - 3rd Supplement as at 13th January 1984

As always in January, this list includes some names and addresses which came in the last quarter of 1983 and who have not yet renewed (and perhaps may not do so) for 1984.

* in the left-hand margin denotes a change of address, or other change.

Robin Almond, 19 St. John's Terrace, London W10 4RB, UK; t: 01-969 0480 (hpschd, etc; M,R).

Anthony Arnold, 25 Clarendon Street, Nottingham, UK; t: 473482 (ww; M,R).

Anthony G. Barratt, 192 Fishpool Street, St. Albans, Herts AL3 4SB, UK; t: St. A 39471 (lute, early gtr, pipe & tab; M,P).

* Peter Bavington; t: 01-521 5459.

John M. Bence, 126 Shanklin Drive, Leicester LE2 3QB, UK (hpschd, M; bar recdr; consort dir).

* Robert Bigio, 48 Sunningfields Road, Hendon, London NW4 4RL, UK; t: 01-203 1348.

Stephan Blezinger, Florengasse 9a, D-6400 Fulda, West Germany; t: 0661/74186 (recrdr, flute; M).

Bodleian Library, Richard Bell, English Accessions, Department of Printed Books, Broad Street, Oxford OX1 3BG, UK; t: 244675.

Margaret Bruce, 35 Vicarage Grove, Camberwell Green, London SE5, UK (recrdr; M,P).

Christopher Challen - see West Dean College.

David Chatterton, 46 The Heights, Northolt, Middx UB5 4BP, UK; t: 01-422 8788 (bassoon, contra, crooks; M).

* Peter Collins, The Coach House, Barwick Road, Standon, Ware, Herts SG11 1PR, UK.

Robert H. Cronin, 360 M. mona Dr, Menlo Park, CA 94025, USA; t: (415) 323-3436 (bassoon, curtal; M).

Roger Curtis, 8 Oakdene Close, Brockham, Betchworth, Surrey RH3 7JE, UK; t: Betchworth 3697 (ww; M).

Mathew Dart, 16 Vauxhall Grove, London SW8 1SY, UK; t: 01-735 0479 (flute, oboe, bassoon; M).

Bernd Deja, Ebertystrasse 44, DDR-1034 Berlin, DDR; t: 5-509921/264 (ensemble dir).

F Martin Edmunds, 9 Hardy Road, London SE3 7NS, UK; t: 01-858 5942 (ren viols).

Bernard Ellis, The Forge, Wigmore, nr Leominster, Herefordshire HR6 9LH, UK; t: 056886-462 (early str instrs; M).

* Bernard Emery, 10 Cairnlee Park, Bieldside, Aberdeen AB1 9AF, UK; t: 868483.

* Andrew Fairfax, 'Christmas Cottage', Berkeley Road, Tunbridge Wells, Kent, UK.

* James & Sylvie Fawcett, 1 Red House Yard, Thornham Magna, Eye, Suffolk IP23 8EX, UK (vln fam, M,P; hpschd, R).

Charles Foster, 45 Seafield Road, Aberdeen, Scotland AB1 7YS, UK; t: 35370 (early wind; M,P).

Roy Gifford, 9 Moat Walk, Pound Hill, Crawley, Sussex, UK; t: 0293-882079.

Simon Gilbert, The Barbican YMCA, Fann Street, London EC2Y 5BR, UK; t: 01-628 0697.

Martin Goetze - see Dominic Gwynn. (organs).

* William D. Hendry, 58 South Street, Fochabers, Morayshire, Scotland, UK; t: 820676.

Trevor Herbert, The Open University of Wales, 24 Cathedral Road, Cardiff, S. Glamorgan, UK; t: 0222-397911 (sackbut; P).

* John D. Hill jr, 66 Marsh Woods Lane, POBox 1628, Wilmington, Delaware 19899, USA.

* Tim Hobrough, Widsith Ltd, c/o Bochruben House, Torness, Inverness IV1 2TZ, UK.

Peter Holman 119 Maldon Road Colchester Essex CO3 3AV UK. +. 0206-

- Jane Hutber, 35 High Street, Rushton, Kettering, Northants NN14 1RQ, UK; t: 0536 711035 (bowed instrs, esp gamba; strings).
- John Isaacs, 18 Barton Road, Ely, Cambs CB7 4DE; t: Ely 2221 (lute; M).
- Hans Johansson, 25 Grand Rue, Luxembourg; t: 23183 (vln fam; M,R).
- * Lewis Jones, 109 Grove Hill, South Woodford, London E18 2HY, UK; t: 01-530 5404.
- P. Malcolm Jones, 73 Oxford Road, Moseley, Birmingham B13 9SG, UK; t: 021-449 7139 (keybds, reed ww, M,C,P, res; mus. librarian - help offered).
- * Myke Joyce (not Mike) (add guitar).
- * Paul Kemner, 2456 Glenwood, Toledo, OH 43620, USA.
- Ignace de Keyser, Leeuwerikstraat 35, B-9000 Gent, Belgium; t: 091/229453 (ancient ww; Curator, Cons).
- Thomas Kiefer, Schalkerstr. 72, D-4650 Gelsenkirchen, West Germany; t: 0202/492921 (bassoon; P).
- * Geoffrey E. King, 619 Pershing Drive, North Augusta, SC 29841, USA; t: (203) 279-8340.
- Michael Lavis, 21 Victoria Road, Wood Green, London N22, UK; t: 01-888 8340 (bagpp; M).
- * John Marriage, Orchard House, 2 High Street, Bourn, Cambs CB3 7SQ, UK; t: Caxton (09544)-532.
- John R. Matthews, 2 Foster Road, Alverstoke, Gosport, Hants PO12 2JJ, UK (str instrs, esp. vln, lute; M).
- * Irmela Judith Meier, 19 St. John's Terrace, London W10 4RB, UK.
- * Marcus Mevissen, Leursstraat 8B, NL-6166 CL Geleen, Netherlands.
- Keith Middleton, Hunts Cottage, Dane End, Ware, Herts, UK; t: 002084-408 (bar gamba & vln; M).
- * Jorge Mindreau, Ruspoel 1, B-9242 Munte, Belgium; t: 091/628998.
- Nigel H. Morgan, Appledore, 35 Montague Road, Berkhamsted, Herts HP4 3DZ, UK; t: 04427-5797 (harp; M).
- * Michael Nagy, Mülker Bastei 8/11, A-1010 Wien, Austria; t: 0222/632526.
- Dennis Naish, 3 Sandwich Street, London W6H 9PL, UK (spinet; P).
- * Nick Odell, 8 & 9 Church Terrace, Outwell, nr Wisbech, Cambs, UK; t: 0945-773912.
- F Guy Oldham, 10 Newton Grove, Chiswick, London W4 1LB, UK; t: 01-995 9029 (all instrs, esp organ; C,P,W).
- * Leonard W. Parr, Old Post Cottage, High Road, North Stifford, Grays, Essex, UK.
- Martin Pühringer, Unit 5, 7 Westway, Oxford, UK; t: 250123 (hpschd; M).
- Michael Ransley, 58 Bennington Square, Vauxhall, London SW8, UK; t: 01-582 5282 (ww, esp ren recdr; M).
- * Paul Steven Reap, HMP Haverigg, Millom, Cumberland, UK.
- F Mary Remnant, 15 Fernshaw Road, Chelsea, London SW10, UK; t: 01-352 5181 (pfte, rebc, vln, fidl, pos orgn, medgtar, rcrdr, bells, psaltry, etc).
- Karin Richter - see Malcolm Rose (lute, clavchd; M).
- Benjamin Rosevink, Cherry Trees, Wroughton Road, Congresbury, Avon BS19 5AN, UK; t: Yatton 832167 (vln, rcrdr, flute, shakuhachi; M).
- Paul Sargeant, 141 London Road, Ewell, Epsom, Surrey KT17 2BT, UK (ww, esp clarinets, saxph, sarrusph; P,L).
- * Huw Saunders (not Saudners) - apols jm.
- Dominic Shann, 67A Islingword Street, Brighton BN2 2US, UK; t: Brighton 602856 (gamba; M).
- Rui Canellas da Silva, R. Possos Manuel 94-50D, 1100 Lisboa, Portugal; t: 534529.
- D.K. Skinner, 394 Kettering Road, Northampton NN3 1LN, UK; t: 42723 (brass instrs; M,P).
- Ekkehart Stegmüller, Mozartstrasse 1, Postfach 2113, D-7910 Neu-Ulm, West Germany; t: 0731/721158.
- Anthony Tammer, 1431 Bancroft Way, Berkeley, CA 94702, USA; t: (415) 548-1039 (kavals; M).
- Ronald Zachary Taylor, 12 Bath Street, Rugby, Warwickshire, UK; t: 0788-69584 (lute, early frettd instrs, gtar; M,P).

R.P.Thomas, 40 Bellbrook Crescent, Christchurch 1, New Zealand (lute, dulcimer, guitar; C,P).

Anne & Ian Tucker, The Hermitage, 69 South Street, Manningtree, Essex CO11 1DT, UK; t: 020639-3670 (hpschd; M,R).

Rob Turner, 499 Washington St, Winchester, MA 01890, USA; t: (617) 729-8318 (recdr, traverso; M,P).

David Vanecek, POBox 841, Lexington Park, MD 20653, USA.

Henri E. Vanherle, Oude Gentstraat 2B, B-8860 Meulebeke, Belgium.

Horst Vladar, t: 0651/74554.

Raphael Weisman (not Maish - change also in Indices).

West Dean College, Christopher Challen, West Dean Musical Instrument School, (the rest as before).

David E. Williams, The Old Schoolhouse, West Keal, Spilsby, Lincs PE23 4BD.

Andrew D. Wooderson, 51 Townley Road, Bexleyheath, Kent DA6 7HY, UK; t: 01-303 7028 (hpschd; M).

Denzil Wraight, Ziegelstrasse 19 (the rest as before); t: 06421-33546.

David Zimet, Box 6565, Ithaca, NY 14851, USA.

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Acoustics: John Edwards

Conservation: Ignace de Keyser

Library refs: Malcolm Jones

Brussels Museum: Ignace de Keyser

All Instruments: Guy Oldham

Percussion: Tony Barratt
Mary Remnant

String Instrs Gen: Bernard Ellis
John Matthews

Strings: Jane Hutber
Malcolm Rose

Dulcimers: R.P.Thomas

Psaltery: Mary Remnant

Keyboards Gen: Malcolm Jones

Pianoforte: Mary Remnant, Dennis Woolley

Harpsichord etc: Robin Almond

Peter Holman

A & I Tucker, h

John Bence

Dennis Naish, s

Andrew Wooderson, h

J & S Fawcett, h

Martin Pühringer, h

Clavichord: Karin Richter

Fretted Str Gen: Ronald Taylor

Plucked Str Gen: Ian Harwood

Lute: Tony Barratt

John Matthews

Ronald Taylor

John Isaacs

Karin Richter

R.P.Thomas

Guitar: Tony Barratt

Mary Remnant

R.P.Thomas

Myke Joyce

Ronald Taylor

Bowed Str Gen: Ian Harwood, Jane Hutber

Fiddle: Mary Remnant

Str. Instr Mutes: Robert Dougan

Rebec: Mary Remnant

Violin Fam: Peter Holman

John Matthews

Mary Remnant

Hans Johansson

Keith Middleton

Benjamin Rosevink

Viola da Gamba: Martin Edmunds

Jane Hutber

Dominic Shann

Peter Holman

Keith Middleton

Harp: Nigel Morgan

Wind Instrs Gen: Charles Foster

Woodwind Gen: Anthony Arnold

Geoffrey King

Roger Curtis

Michael Ransley

Traverso: Stephan Blezinger

Benjamin Rosevink

Mathew Dart

Rob Turner

Shakuhachi: Benjamin Rosevink

Kaval: Anthony Tammer

<u>Recorder:</u> John Bence	Michael Ransley	Rob Turner
Stephan Blezinger	Mary Remnant	Andrew Willoughby
Margaret Bruce	Benjamin Rosevink	

Tabor Pipe: Tony Barratt

<u>Organ:</u> Martin Goetze,	Mary Remnant	Guy Oldham
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<u>Reed Instrs Gen:</u> Malcolm Jones	<u>Capped Reeds:</u> Peter Stephens
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<u>Clarinet:</u> Paul Sargeant	<u>Saxophone:</u> Paul Sargeant
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<u>Curtal:</u> Tobert Cronin	<u>Sarrusophone:</u> Paul Sargeant
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<u>Bassoon:</u> Robert Cronin	Mathew Dart
David Chatterton	Thomas Kiefer

<u>Oboe:</u> Mathew Dart	<u>Shawm:</u> Stuart Forbes
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<u>Bagpipes:</u> John Goodacre, s	Michael Lavis
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<u>Brass Gen:</u> D.K.Skinner	<u>Sackbut:</u> Trevor Herbert
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<u>Belgium:</u> Ignace de Keyser	Henri Vanherle
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East Germany: Bernd Deja

<u>West Germany:</u> Stephan Blezinger	Thomas Kiefer	Ekkehart Stegmiller
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<u>Luxembourg:</u> Hans Johansson	<u>New Zealand:</u> R.P.Thomas
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Spain: Rui Canellas da Silva

<u>UK:</u> Benjamin Rosevink, Avon	Tony Barratt, Herts
John Isaacs, Cambs	Keith Middleton, -----
Paul Reap, Cumbr	Nigel Morgan, -----
Peter Holman, Essex	Andrew Fairfax, Kent
Anne & Ian Tucker, -----	Andrew Wooderson, ----
John Matthews, Hants	John Bence, Leics
Bernard Ellis, Heref	David Williams, Lincs

<u>London:</u> Lewis Jones, El8	Michael Ransley, SW8
Simon Gilbert, EC2	Guy Oldham, W4
Michael Lavis, N22	Robin Almond, W10
Martin Edmunds, SE3	I.Judith Meier, ---
Margaret Bruce, SE5	Mary Remnant, SW10
Mathew Dart, SW8	Dennis Naish, WC1

<u>UK:</u> David Chatterton, Middx	J & S Fawcett, Sufflk
Malcolm Jones, W.Midl	Roger Curtis, Surrey
Martin Goetze, N-Hant	Paul Sargeant, -----
Jane Hutber, -----	Roy Gifford, Sussex
D.K.Skinner, -----	Karin Richter, -----
Anthony Arnold, Notts	Dominic Shann, -----
Bodleian Library, Oxon	Ronald Taylor, Warwks
Martin Pühringer, ----	

<u>Scotland:</u> Bernard Emery, Aberdeen	Tim Hobrough, Inverness
Charles Foster, -----	William Hendry, Moraysh

Wales: Trevor Herbert, S.Glam

<u>USA:</u> Robert Cronin, CA	David Vanecek, MD
Anthony Tammer, --	Rob Turner, MA
John Hill, Delaware	David Zimet, NY

On the key system of the organistrum

Several musicologists have pointed out the organistrum (Fig. 1) which is drawn, together with a harp, a lyra and a lyre, in Gerbert's "De Cantu et Musica Sacra" (1744). He copied the drawing from a 12th century manuscript that is lost.

A relatively common interpretation of this drawing is that the 8 tangents of the organistrum are, by a rotating movement, able to turn up the revolving bridges so that their edges press against all three strings at once. If these strings are tuned in fifths and octaves, the organistrum would have played a strict parallell organum.

In 1979 I made a suggestion of reconstruction of the two-man organistrum that is sculptured in the lintel of the central door of the cathedral at St. Iago de Compostella from the year 1188. As time goes by, I am getting acquainted with my organistrum and I am trying out different variations of some details of its construction. Maybe could some of my reflexions be of interest.

1. The positions of the tangents

Published photographs of the St. Iago de Compostella organistrum show visible tangents at equal distance from each other along the upper side of the long neck. 12 keys give a chromatic scale. As well-known, the touching points where the keys reaches the strings must not be at equal distance from each other - they should diminish from the nut towards the wheel at each intervall - according to Pythagoras or our western musical scales in general.

Because of the cover that protects the key mechanics, nobody can proof how it works, but I suggest the following:
The tangents are pressed down, not turned. Each key has a flat, rectangular extension more or less protruding towards the nut or the wheel. Each key has three small, "flag-like" stops, one for each string, for the exact tuning of the keys - just like for the ordinary hurdy-gurdy. These stops are fitted in small holes on the key extensions which may allow place for proper touching positions in order to produce the wanted scale. (Fig. 2)

2. The tuning in fifths and octaves

When I tune the three strings into fifths and octaves, using the first the tuning screws and after that the stops on the keys, I find that the vibrating length of the highest string needs to be about 5 mm longer than the lowest string (my organistrum has strings of 690 mm total vibrating length, tuned C G d).
It is difficult to understand how an organistrum could be exactly tuned in fifths and octaves by using revolving bridges. Their edges could hardly be constructed with fine-tuners and they would describe lines at a right angle to the strings, which, especially towards the higher notes, would not produce pure fifths and octaves. Further - the revolving bridges would rise the strings so that they loose their necessary contact with the wheel!

3. The Gerbert drawing

The mentioned drawing by Gerbert, seems to confirm some of my conclusions. The tangents that protrude from the neck protrude more at equal than at diminishing distance from each other. If this instrument had stops on its keys, which I believe, this is not shown in Gerbert's drawing. Perhaps it was omitted in the original medieval manuscript. We can however see key extensions, all protruding towards the nut. In my opinion it is an one-man instrument we see. Differently from the St. Iago de Compostella instrument, it is more comfortable for the musician to reach the row of tangents as near as possible, with his left hand. As a result, all the extensions protrude towards the nut, in order to keep the correct (diminishing) positions of the stops.

The width of the extensions along the key axle may control the altitude of its moving up and down. Most probable there is some kind of a small metall spring on each key to hold them up when not pressed down. This is of course not necessary if the tangents are placed on the underside of the neck.

Olov Gibson

Organistrū

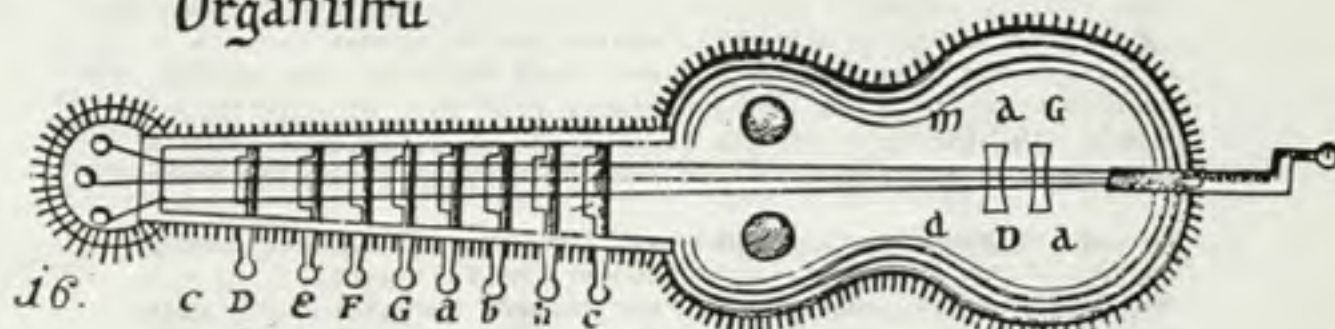


Fig. 1. Gerbert's drawing

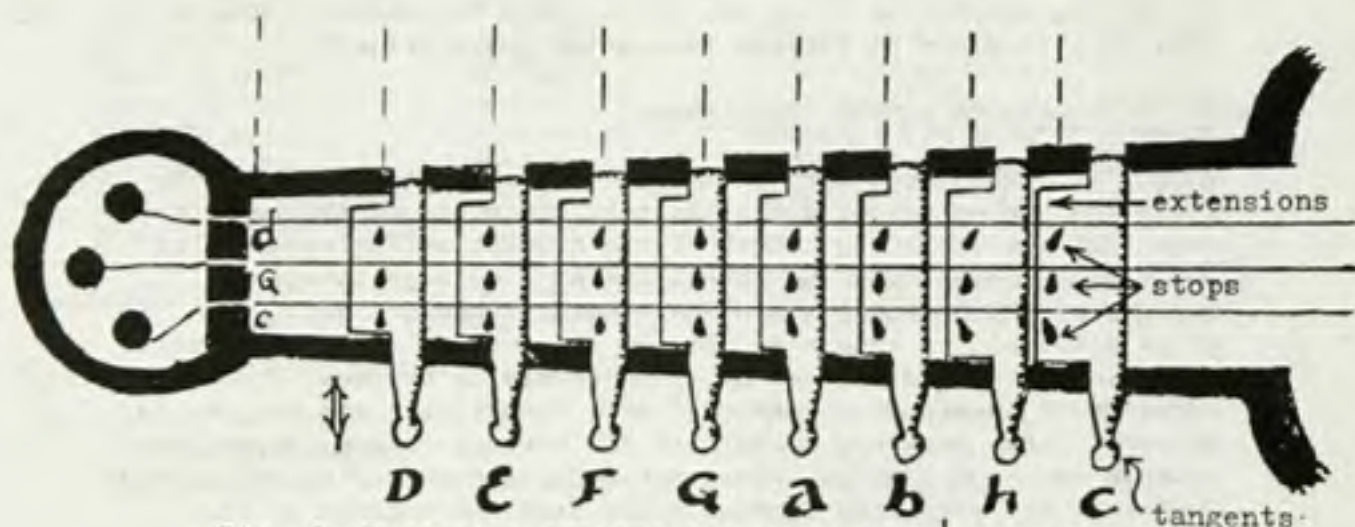


Fig. 2. Suggested explanation of Gerbert's drawing

DEAN CASTLE: VAN RAALTE COLLECTION OF MUSICAL INSTRUMENTS

The three organs in the collection (Nos. 85 and 88 in store, No. 86 on display) were inspected very briefly and a few notes made about them. These notes and the comments which follow are intended as a supplement to the museum inventory. (SEE COMM. 360)

Inv. No.

85 Italian positive organ

Compass: f, g - f¹, 24 notes
 Total width of keyboard 342 mm
 Length of naturals 85mm
 Length of heads 32mm

The keys are hinged at the back and there is a pin action to the windchest. There is a single rank of open wooden pipes behind the dummy facade. The treatment of the caps is of interest: the tops have been carved away to the width of the mouth, leaving ears which are about as long as the width of the mouth.

There is a single fold feeder supplying a single fold horizontally rising reservoir (480mm x 210mm) pressurised with two lead weights. The feeder is hinged at the treble end and is operated by an iron handle which sticks out of the case at the bass end.

The organ is at present unplayable, but appears to be entirely original with the possible exception of the silver painted display pipes.

88 German positive organ

Compass: F, G, A - f², 36 notes
 The top key and bottom key are much wider than the rest (30mm)
 Width of keyboard without top and bottom keys 470mm
 The keyboard is similar to that of No. 85
 Keys hinged at the back with leather (see drawing)

The key action is very unusual and rather complicated, involving backfalls within the windchest, just visible through the wind entry holes in the back.

There is a single rank of stopped wooden pipes, painted red, arranged in two rows, back to back, the top seven pipes in a third row in front. The wood is open grained, possibly oak.

Pipe marks are visible on some pipes (see data sheet).

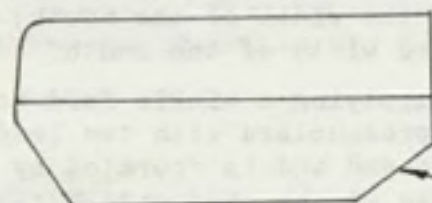
Pipe F is 880mm from cap to top,
 C is 528mm " " " " i.e. the pipes are of 8 ft. pitch.

There are two holes in the back of the case for bellows (missing).

The detail and execution of the casework appears to be nearer 19th century than 17th century. In fact, there appears to be much 19th century work, with the possibility that the organ was made up from old parts. Although the keyboard looks old, the use of leather as a hinge is very unlikely to be original, particularly as it has been glued to the wrong surface (see drawing). It is also questionable whether single rank positive organs ever had stopped pipes.

86 French positive organ

Pipes, mechanism, keyboard and windchest are 19th century, the case and bellows are old. A very small instrument, whose original layout is uncertain. The two small bellows lie behind the organ.

SHARP KEY OF GERMAN ORGAN (No. 88)

LEATHER GLUED TO THE SURFACE

50mm

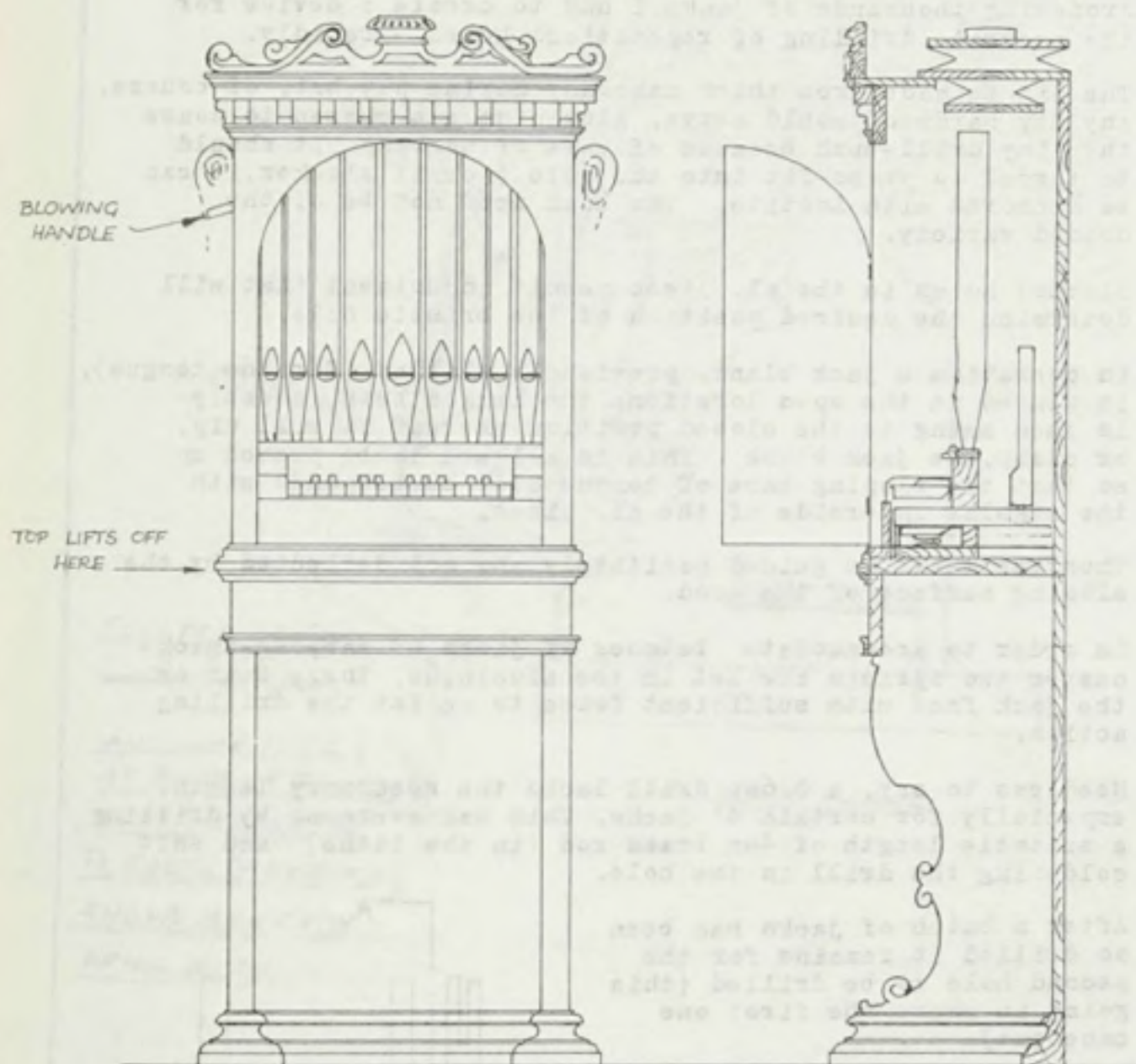
PIPE MARKINGS OF GERMAN ORGAN

\bar{c} \bar{a} \bar{j} \bar{d} \bar{e} \bar{f} \bar{g}

MARKED IN INK, HALF-WAY UP THE PIPE FRONT

(TAKEN FROM SMALLEST ROW OF PIPES)

DEAN CASTLE, KILMARNOCK
ITALIAN POSITIVE ORGAN, INV. No. 85



Drilling bristle-holes in wooden jacks

In the course of preparing this comm. I realized that the accompanying drawing (done for this purpose) was more difficult than the construction of the actual jig.

The drawing looks complicated but the jig made up quite easily - but with some trial and error.

Producing thousands of jacks I had to create a device for the accurate drilling of repetitious holes - rapidly.

The jig is made from thick mahogany marine ply but, of course, any dry hardwood would serve. Aluminium was chosen to house the tiny drill-bush because of ease of working. It should be turned to press-fit into the hole (or, if slacker, it can be anchored with Loctite. The bush need not be of the headed variety.

Slotted holes in the al. piece permit adjustment that will determine the desired position of the bristle hole.

In operation a jack blank, previously slotted (for the tongue), is placed in the open location; the hinged bush assembly is then swung to the closed position whereat it will nip, or clamp, the jack blank. This is allowed to be pushed up so that the sloping base of tongue slot corresponds with the angular underside of the al. piece.

Thus the drill is guided positively and not deflected by the sloping surface of the wood.

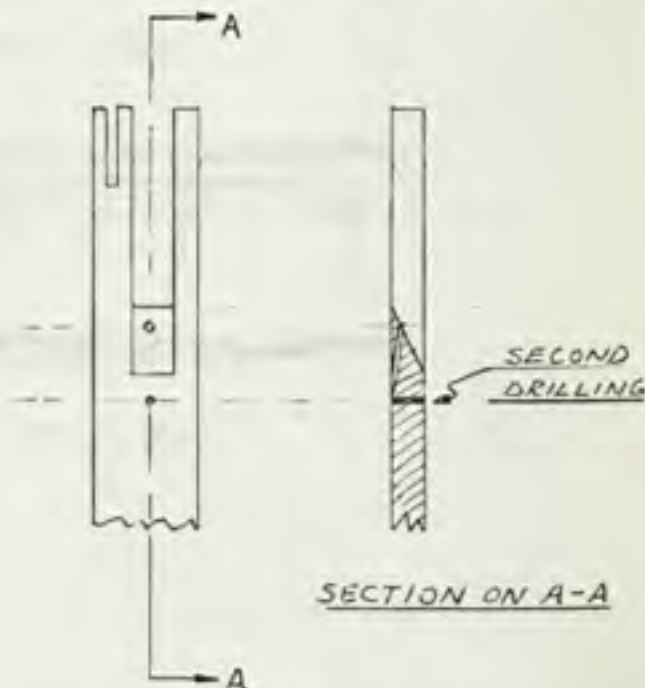
In order to accommodate batches of jacks of varying thicknesses two springs are let in the aluminium. These bear on the jack face with sufficient force to resist the drilling action.

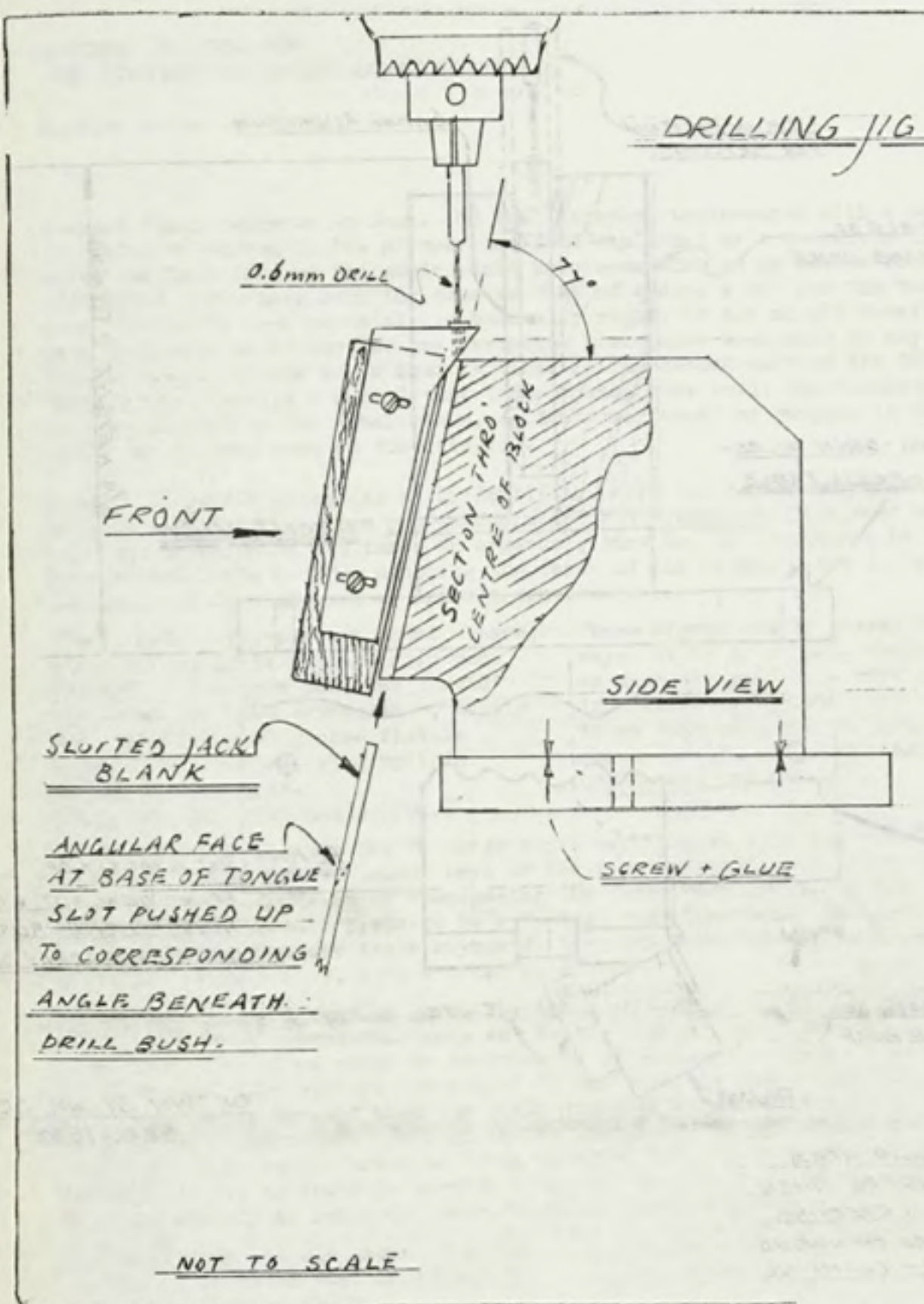
Needless to say, a 0.6mm drill lacks the necessary length, especially for certain 4' jacks. This was overcome by drilling a suitable length of 4mm brass rod (in the lathe) and soft soldering the drill in the hole.

After a batch of jacks has been so drilled it remains for the second hole to be drilled (this going in where the first one came out)

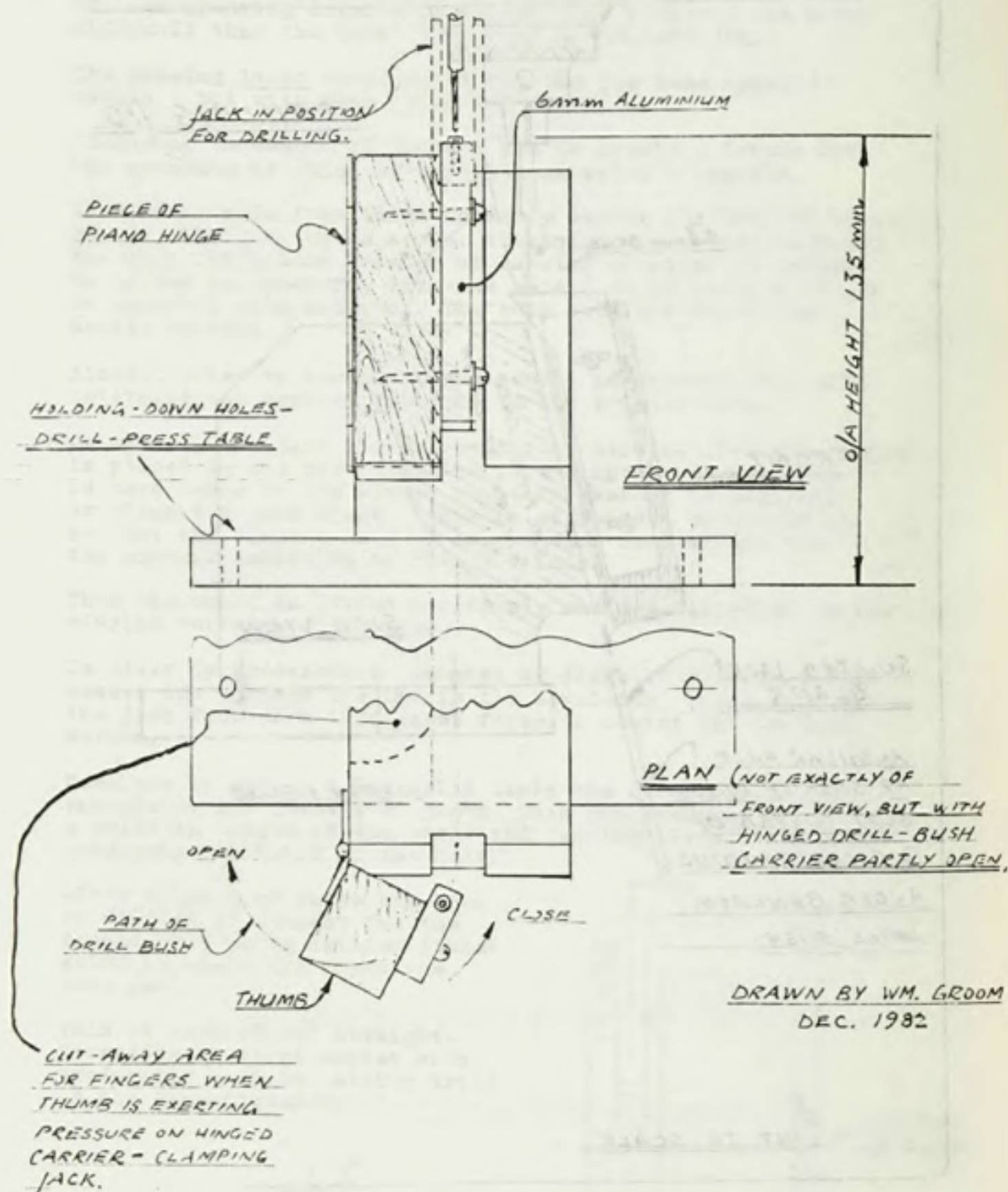
This is carried out straightforwardly at right-angles with, preferably a short, stubby drill of the same diameter.

Wm. G.





FOR BRISTLE SPRINGS



COMMENTS ON COMM. 488:
 "THE FINGERED 16' ON THE HARPSICHORD"

Nicolas Meeùs

Richard Shann suggests in Comm. 488 that keyboard instruments with a compass extending to unusually low pitches could be explained by a technique in which the bass line of the music would have been doubled an octave lower; the effect would have been the same as that of adding a 16' for the bass part. Richard's idea certainly is basically right, if not in all details. I have my doubts as to whether the technique could have been used on any regular basis as late as in Shudi's time, in the second half of the 18th century; but this is a period that I don't know very well. The technique is well documented in the Renaissance, on the other hand: my purpose is to quote and discuss some of the evidence.

Arnault de Zwolle discusses an unidentified organ 'of the Franciscans' which he says had 10 large pipes pro subdupla tenoris organorum. This must mean 'for the doubling of the tenor in organum', that is, in polyphony; Le Cerf & Labande translate as 'for doubling the tenor of the organs', but I don't see how this can make any sense. Arnault continues:

illa organa tripliciter possunt sonare,
 uno modo simplicia organa, alio modo
 duplicia — ita quod quelibet clavis
 ingrossat per suam subduplam —, tertio
 modo quod solum 10 grosse fistule
 serviant pro tenore, et simplicia
 organa pro discantu.

(Mod. ed., pl. XIVb and p. 29s.)

These organs can be played in three ways, first as simple organs, then as double organs — so that any key is doubled an octave lower —, third that only the 10 large pipes serve for the tenor and the simple organs for the discant.

It is not clear whether the 10 large pipes were played from a separate tenor keyboard or from the 10 lowest keys of the main keyboard, but in any case they served for doubling or transposing the tenor part which, in the two-part music to which Arnault seems to be referring, must have been the lower part. If there was a separate tenor keyboard, then the doubling may have been performed mechanically, with a coupling device.

Arnault calls the organs on which the tenor is doubled 'double organs'. Could it be that expressions such as 'double organs' or 'a pair of organs', which certainly often refer to instruments of extended compass, originated in the technique that Richard described? To say that the tenor notes are doubled an octave lower, Arnault uses the latin ingrossat, for which this is a novel acceptation. 'Ingrossare' belongs to the juridical language, where it means 'engross', literally 'write in large letters'. This term, or Dutch or German variants of it, is found in several 15th- or 16th-century organ contracts, often apparently to refer to (exceptionally?) low compasses:

In den eersten sal die orghel ingross-
 iert wesen op seven voet an effaut te
 beghinnen (Zwolle, 1447).

Firts the organ will be 'engrossed'
 on 7', beginning at F.

syn oergelwerck van achte voeten ingross-
 eert als fgabn (Zwolle, 1454).

An organ of 8' 'engrossed' as FGA
 B_b B.

Item das posityf van 4 voetten hangende sal ingrossiert wesen tot 6 voetten toe ('s-Hertogenbosch, before 1504).

Bardon sechs uff zwelf gegrosseert (Trier, 1585).

Item the (hanging?) positive of 4' will be 'engrossed' (here, enlarged) up to 6'.

Bourdon 6', 'engrossed' on 12' (a stopped bourdon, obviously).

* * *

A famous passage from Bartolomeo Ramos de Pareia's *Musica practica* (1482) has been mistaken as the earliest reference to the short octave. It does not specifically mention the short octave, but it does refer to extended compasses:

Sed modernorum polychorda et etiam organa octo voces sub c gravi in ordine ponunt naturali. Non tamen habent voces coniunctas q quadrati sive b mollis sub proslambanomenon, sed tantum est diapente recta sub f ut ita ut f sit octava g solreut, retropolis octava sive diapason f faut et alia diapason e lami aliaque d solre et alia c faut. Octava sub d solre id est diapason iam hic Bononiae repperimus polychordum, sed sub c faut non nisi in Hispania. (J. Wolf ed., p. 36f.)

But the modern polychords and organs have 8 notes in the natural order below c. They do not, however, have notes linked together in the durum or molle hexachords below A, but merely a regular fifth below G, such that G is the octave of g, F the octave of f, the next the octave of e, the next of d and the last of c. We have seen here in Bologna a polychord that reached down to the octave of d, but none to the octave of c, unless in Spain.

The reason why this text has been misunderstood as referring to the short octave is that the latin coniuncta has several meanings: Tinctoris uses it to mean 'accidentals'; if Ramos understood it in that way, he would be saying that the instruments that he mentions have no accidentals in the low octave — and therefore possibly had a short octave. But Ramos understands the term otherwise, as denoting notes that belong together to the same hexachord. What he is saying is merely that the hexachordal system does not extend below A.

For this reason, Ramos has no name for the notes below G or F: this is why he describes them as doubling the notes an octave above; but he extends this conception to F and G as well, although he has names for them. Whether Ramos' view about these notes had any counterpart in the contemporary practice of keyboardists is uncertain, but the possibility cannot be discarded.

* * *

Sebastian Virdung (1511) considers that the normal range of a clavichord is three octaves wide. He nevertheless knows of instruments that cover four octaves or more, which he explains as follows:

vnd wye wol man ouch jetzunden vil nûwer clauicordia findet / die noch grösser oder lenger von fier octauen oder noch mer schlüssel haben / So synd die selben nich anders dan glych ein repetition der ersten styment der dryer octauen / vnd werden das merer teyl darumb also gemacht / das man den selben angenehckte pedalia mag zu geben. (folio Fj r°).

And although one finds today many new clavichords that are bigger and longer, with keys for four octaves or more, these (keys) are no more than a mere repetition of the first notes of the three octaves. And they will be made in most cases so that one can give them suspended pedals.

It probably can be deduced from this passage that the extension of the compass that Virdung had in mind was (mostly) towards the bass. Much like Ramos, he views the low notes as mere doublings of those of the normal compass, which began at F. One purpose of the extension of the compass is to permit suspended pedals: this most probably was in order to be able either to double the bass part or to transpose it down an octave, as described by Arnault. The effect would be in any case of adding a 16' — this one, however, could not be described as a 'fingered' one.

. . .

Virdung's passage draws attention on the possible relation between pedalboards and extended manual compasses. Suspended pedals may have required additional keys in the bass of the keyboard; these keys were perhaps not often played with the fingers, but they were mechanically needed to support the pedal pull-downs. This fact may be sufficient to explain some otherwise surprisingly wide ranges of early organs or other keyboard instruments. Organs with an independent pedal did not need additional keys on the manual, but the pedal of course afforded the same possibilities as the extended manual compass, doubling one part an octave lower, or transposing it down an octave.

Richard rightly notes that there seems to be very little existing repertory for keyboards with extended compass. On instruments without pedal, the extended compass would help playing the repertory that requested a pedal. A few 16th-century pieces do reach unusually low pitches. It is so that the tablature of Johannes of Lublin (early 16th century) at times reaches E or D, while the normal limit of keyboard ranges at that time would have been F. The low notes always appear as doublings of notes an octave above, usually in cadences; generally, the low notes increase the overall number of parts, which underlines their dependency on the notes that they double. Similar cases could be found in many 16th-century organ pieces (especially, I think, in Italy).

Richard has the idea that the 'fingered 16' would be achieved with the left hand playing in octaves between thumb and little finger. This, I think, is too limited a view of the reality. The improvised 16' was played in many ways, also with the feet as we have seen. Besides, the part doubled an octave lower must not necessarily have been the bass part: it may have seemed desirable, for instance, to double the cantus firmus rather than the bass, the cantus firmus being placed for instance in the tenor. In this case the tenor would then pass under the bass, which would result in an inversion of the counterpoint. This practice might explain some otherwise odd 6-4 chords that can be found in the early keyboard repertory. Needless to say, in the case just described the left hand would have to play together the tenor, the bass and the doubling of the tenor, with fingerings that may at times have been complex.

For the same reason, Richard's idea that keyboard instruments without short octave would better suit the fingered-16' technique is perhaps not exact. In some cases at least, the short octave might on the contrary have been an help, as it places lower notes within reach of the left hand. I have a feeling that one reason that prompted the short octave was that harpsichordists wanted to be able to play on their manual keyboard what organists were able to do with their feet; this would also explain why, as it seems, the short octave has not been introduced on organs before late in the 16th century.

. . .

I have a last text to quote concerning the fingered 16'; it shows that the practice was not restricted to keyboard instruments. Bermudo writes (1555) that the harp goes down to C; this is lower than most of the contemporary harp repertory. He explains the purpose of the low notes saying that they serve

para hazer las clausulas (de) los modos naturales con octava (fol. cx v^o). for playing the cadences of the natural modes with the octave.

What Bermudo has in mind here must be quite similar to the doublings found in the tablature of Johannes of Lublin and other early organ tablaturs, as mentioned above, with the similar purpose of reinforcing chords at important moments of the music.

.

Richard's idea is that the fingered-16' practice was linked to 'a particular sort of keyboard layout', 'characterised by having a few extra natural key-levers in the bass usually without the intervening accidentals'. He refers to a harpsichord in the Brussels Museum, n. 2510, analysed by John Koster in GSI XXXV. I should stress that Koster's hypotheses about this instrument fail to consider ~~some~~ of the evidence and do not really resist criticism. I cannot however propose any alternative for the moment: this harpsichord is an incredibly difficult case. I may come back on this in a future issue of FOMRHIQ.

I know of very little evidence for keyboards lacking more than two accidentals in the bass. Ed Ripin has shown (in Emsheimer Festschrift) that the organ in Van Eyck's Mystic Lamb triptych originally had a keyboard beginning at G without accidental before f \sharp ; this is the only case I can think of, and it is probably too early to be relevant in the present discussion.

F-keyboards lacking F \sharp and G \sharp must have been common in the early 16th century and are documented until rather late in the century. Pedro Cerone, writing in 1613, considers that the keyboards usually begin at C/E, short octave; he knows of keyboards beginning at F without F \sharp nor G \sharp , and also mentions keyboards beginning at C without C \sharp nor E \flat ; these, to my knowledge, are mentioned nowhere else. (See Melopeo y Maestro, p. 932)

In conclusion, I would stress once more that Richard's idea of the fingered 16' is amply documented in the Renaissance. The practice existed apparently on various types of instruments and was not confined to keyboards. There is no reason to suppose that it had any link with keyboards with additional diatonic keys in the bass; these keyboards, besides, do not seem to have been frequent at all.

Continuation of Comm. 507

and centre up the bores. Let the glue dry, clean the bore carefully (I use the $\frac{1}{4}$ " drill-bit), and glue another wedge on to the first one, placing the two thicker sides together. Let the glue dry. Repeat this process three dozen times, and eventually you should have a perfect arc made from 38 wedges whose conjoint thick sides form the outside of the curve. In carving the square-section curve to match the straight portion, be careful. You can't grip it in a vice, and there's too much end grain around to let you use a chisel or plane with abandon. If no one finds the confession offensive, I "carved" mine roughly on a coarse sanding drum and finished the job with files. Once you've shaped the body, and funnelled out its last couple of inches as a bell, fill the bore with varnish and leave it to dry. Then fit a reed and drill the fingerholes. There are some optional refinements. You can use wedges for the straight bit as well (by alternating their thick and thin sides). You can use alternate wedges of contrasting woods. I have made a crumhorn by this method. It looks like a piece of Pueblo art, and deserves the Crudest Instrument of 1983 Award; but acoustically it's a very good instrument.

David Z. Crookes

RECORDER VOICING - ANSWERS TO MY QUESTIONS ANDREW A. WILLOUGHBY

The following is a summary of all the answers I have received so far in response to a set of questions I sent to recorder makers all over the world. I have sometimes changed the wording, but hopefully not the meaning! If more than one person gave the same answer, I have underlined it. I have left out all the slanderous statements made against other recorder makers!

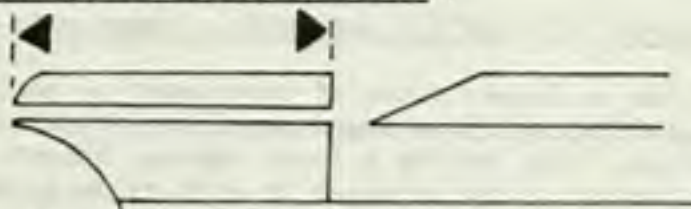
These questions are part of a research project I am doing as a student at the London College of Furniture. Also as part of the project, I am doing my own experiments, and collecting any information already written about recorder voicing. I would be grateful for copies of any written information about recorder voicing.

I sent the questions to 79 instrument makers and have received 36 replies. Of these 36, 7 do not make recorders and could not answer the questions and another 6 did not want to answer, but 23 did answer at least some of the questions.

I wish to thank the following people for being so helpful and answering my questions -

Stephan Blezinger	Philippe Bolton	Adrian Brown	Jan Bouterse
Brian Carlick	Ken Collins	Tim Cranmore	Bodil Dieson
John Edwards	Anders Emmerfors	Don Gill	Edgar Hunt
Gerhard Janke	Alec Loretto	Bob Marvin	Dr. Herman Moeck
Toon Moenen	Rod Nelson	Thomas M. Prescott	Michael Ransley
Gordon Saunders	Jonathan Swayne	Rob Turner	Theo Wyatt

----- ***** -----

WHAT, IN YOUR EXPERIENCE, IS THE EFFECT OF THE FOLLOWING -1. HAVING THE WINDWAY LONGER OR SHORTER ?

Too short and it wont work. It has to look right.

Too short and there would be little cushioning of the build up of air - so tonguing would be too obvious.

Not critical unless very long or very short.

Too long - condensation problems.

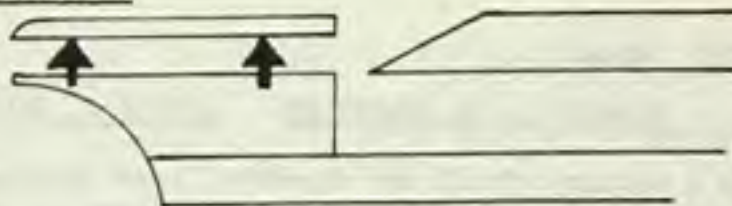
There is a minimum length required to prevent turbulence and give focus to the air-sheet.

The minimum length necessary is less with a narrower and less tapered windway. In many basses the windway is deep, steeply tapered and very short. When these instruments are blown with a pipe, turbulence in the cap passes beyond the windway exit and severely affects the tone and volume. Both can be improved by removing the cap and blowing directly into the windway.

Longer seems to give a more refined, firmer feel.

Longer is more stable and gives more resistance.

Other factors are more important.

2. HIGHER WINDWAY ROOF ?

More air can pass through Less resistance.

Makes the corners at the top of the windway wall too thin - with the risk of cracking. i.e. -



Louder, rougher, coarse and leaky tone.

More flexible.

Too high produces unfocused sound, which cannot be redeemed by other techniques.

Higher pitch.

The air-sheet would miss the fipple edge, making the sound husky and lacking in definition.

Louder, especially in the first octave, but the upper octave will have unwanted noise.

Increase of volume as the roof gets higher, but past a certain limit the tone gets breathy.

No strength in upper harmonics.

Freer and faster bowing, but less control.

Favours lower register.

Tone becomes fuzzy if distance from block to roof is more than 1mm..

Should be 0.8mm. in height.

Fuller tone, becoming breathy.

Less flexibility.

A recorder with a high windway needs more air and becomes very tiring to play.

Breath consumption is the product of exit cross-section and the exit velocity of the air. There is probably an optimum for the exit velocity for any given pitch.

The requisite exit velocity will be achieved with a lower rate of flow with a narrower windway.

This becomes more obvious on larger sizes of instrument - compare the relative air input required to maintain a given sound level on a modern commercial F basset, and an 'historical' copy having a lower windway height.

'Flexibility' is illusionary - any increase in exit velocity and volume will raise the pitch. With a narrower windway, the breath pressure can be increased without noticeably affecting the pitch (or volume) because it demands a greater breath pressure anyway, and a small increase is not so significant, and some will be absorbed by the increased surface drag within the narrower windway.

3. LOWER WINDWAY FLOOR ?

Poorer tone, less resistance.

Similar to roof being too high - poor speech and breathiness.

Too low and the projection that forms the windway floor would disappear, no longer providing a register to fit the plug.

More unstable.

Lack of focus onto fipple edge.

Question 3. continued.

Louder, but less dynamics and not so expressive.

Easier attack.

Makes first octave powerful, but bad for the higher notes.

There is a pre-tone.

Buzzy or spitty response. Sound loses definition.

Necessary for obtaining the low notes if the windway is pointing upwards.

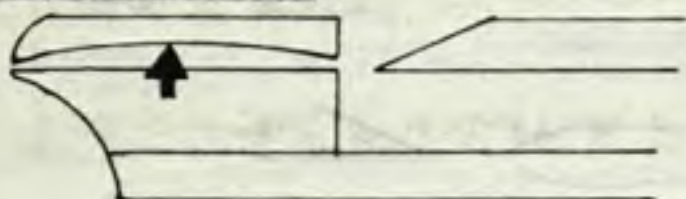
Better in upper octave, but not good for low notes.

Same effect as a higher roof.

Loss of flexibility.

Loss of notes XIII and XV.

Easier third register.

4. ARCHING THE WINDWAY ROOF ?

May improve the tone.

Best if parabolic - helps to concentrate the air-sheet onto the lip.

i.e.

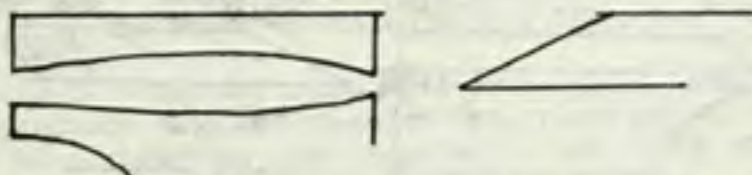


Slight arching seems to have little effect.

This would direct air downwards and create turbulence.

Both floor and roof should be adjusted to give a choke effect, increasing velocity onto the fipple edge.

i.e.

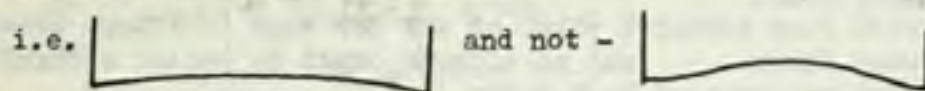


Without the correctly related chamfers the overblown notes are tricky, or even impossible.

Better focus, clearer tone.

Gives a reedy sound - too much gives unwanted noise, particularly with high notes.

Important to make the whole roof concave -



Maybe the position of the highest point along the length of the windway is not important.

Some curvature necessary to ensure a clear path for the air, to avoid scattering of the air-stream at windway exit, and to avoid sagging of roof.

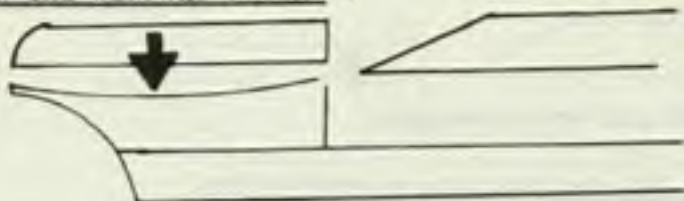
Best to have the highest point $\frac{3}{4}$ way along.

Helps the articulation, the top notes, and gives a more open feeling.

The hollow should only be 0.2-0.3mm.

Always in relation with concave floor and chamfers.

5. A HOLLOW IN THE WINDWAY FLOOR ?



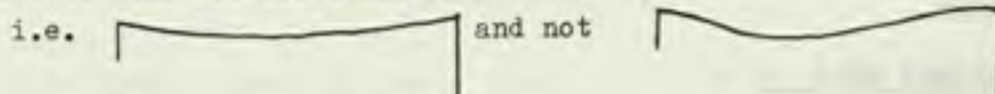
See Question 4.

Just necessary.

Corrects a block that is a little too low, directing the air-stream up onto the edge of the lip.

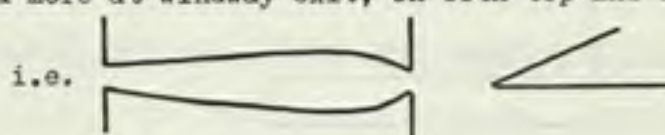
Better focus and clearer tone.

Important to make it all concave -



To prevent a bulge in the windway floor.

Should be curved more at windway exit, on both top and bottom surfaces.



Lowest point best half way along.

Lowest point best $3/4$ way along.

Must be very slight or notes played 'piano' are very precarious.

The hollow should only be 0.2 - 0.3mm..

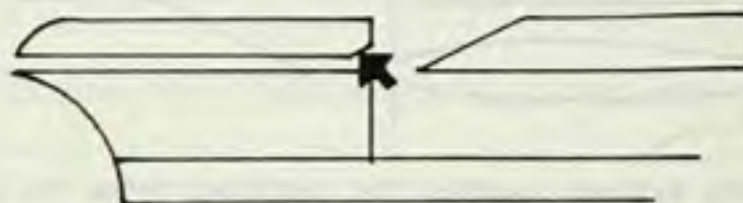
If taken to extreme, and not balanced by other factors, could be disastrous-

i.e. combine a low flat roof, a high floor (level with the lip edge), a windway angled upwards, and an excessive hollow in the floor, and you might end up with a lot of extraneous noise.

To avoid the windway flaring out at the end.

Both floor and roof should be hollowed.

6. TOP CHAMFER ?



Improves the volume and tone of the top register.

Depends on windway floor and roof - deal with as an integral unit.

Both chamfers have different effects on different instruments.

Angle and size important.

Destroys the good reedy tone.

A little smoothing with fine abrasive paper of the top edge is always necessary to prevent 'hairy' wood fibres - not as much as could be called a chamfer.

Improves the attack and response of high notes.

Improves the stability of the low notes.

Gives a reedy and fuller tone.

Too much chamfer creates breathiness.

The chamfers are important for the speaking and response of both the high notes and the low notes.

30 degree angle and 0.7mm. along base of imaginary triangle is ideal.

In isolation a bad idea, in combination with bottom chamfer can improve flexibility and volume, but at expense of tone.

Question 6 continued.

Takes away turbulence.

Breathier and woodier.

Best if between 35 degrees and 40 degrees.

Important to have no burr at edges of chamfers.

Improves the tone to slightly round the chamfer with fine abrasive paper.

Low breath pressure players need a bigger top chamfer.

Important for bottom notes.

Helps the bottom notes speak.

Refines and focuses the tone of the bottom notes.

Should never exceed the size of the bottom chamfer.

Pushing the plug further in is sometimes similar to having more top chamfer.

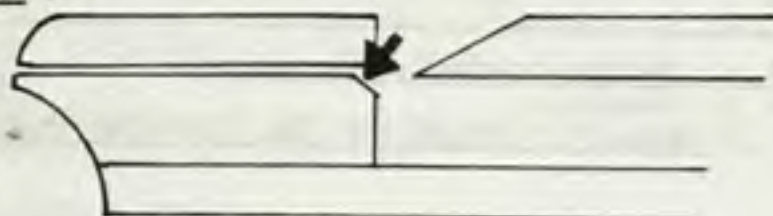
If too big - very soft sound, bottom notes clear but top notes won't speak -

similar to having window too big.

Top and bottom chamfers are necessary.

Too much and the sound will be too easy, too clear.

Influences wind direction.

7. BOTTOM CHAMFER ?

Can improve the tone of lower register.

Improves volume.

Frees the tone if block is high.

Improves stability.

Destroys the bottom notes on some cylindrical recorders.

Refines tone and response Necessary for good tone.

Evens out the sound of the notes and makes them fuller.

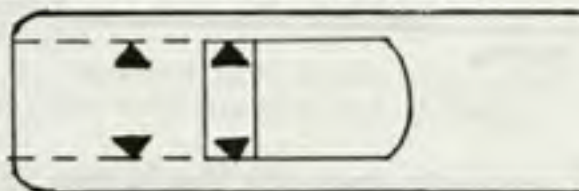
Best if 45 degree angle.

Withdrawing the plug is sometimes similar to more bottom chamfer.

Very critical - controls tone and speed of note reaction.

Correct angle and size, combined with rounding of the inside edge of upper chamfer, gives stability to burblely low notes.

Both chamfers are crucial to give wind direction.

8. WIDER OR NARROWER WINDWAY AND WINDOW / CUT-UP ?

Wider - Raises pitch. Narrower - Lowers pitch.

Has to be drastically different to affect much.

It is significant that nearly all original Baroque alto recorder window are 12mm. x 4.5mm.

Too wide and the lip edge may distort.

Wider mouth increases volume and air demand - excessive increase produces a coarse tone and an excessive air demand.

Wider window increases the volume, but makes the upper notes very vague.

Narrower window gives a softer, distinct, more controlled sound.

question 8. continued.

Any increase in window dimensions (including sloping the side walls will increase the pitch.

Wider - a more open sound.

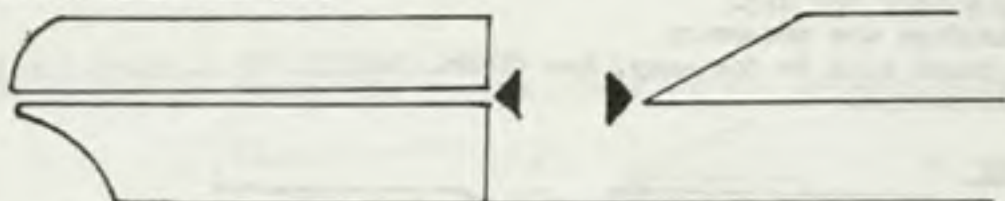
Too small - too soft.

Too small will choke the sound at 'forte'.

Too wide produces a large uncontrollable sound of no character - not a nice sound.

Ethnic instruments, where the fundamental register is not used, have a narrow window, so presumably there is a minimum width for good control of low notes. Wider window can help with a richer sound.

Good compromise widths are - Alto 12mm., Soprano 9.5 - 10mm..

9. LONGER CUT-UP / WINDOW ?

If you lengthen, the sound becomes coarser and breathier.

Too short and the tone is strangled.

Increasing the cut-up increases the volume, but also increases the air-pressure demand.

Raises the pitch.

Loss of effective power and direction.

Short cut up - Easy high notes - Worse low notes.

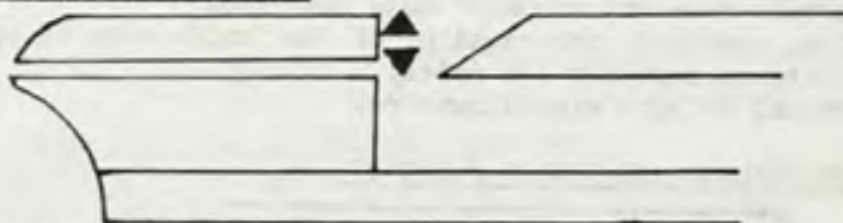
Long cut-up - Strong low notes - worse high notes.

More harmonics with short cut-up.

Longer cut-up - Can blow a lot harder (louder low notes), but less concentration, more 'noise'.

A fuller, less reedy tone, tending to breathiness.

Diffuses the tone, loses all tone.

10. DEEPER WALLS TO THE WINDOW ?

Improves the strength of low notes.

Not much difference.

Lower Pitch.

More clear, quieter sound.

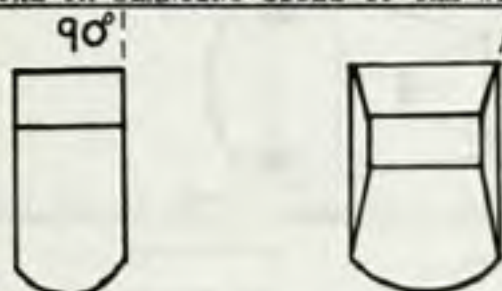
Stronger tone to the voicing, and could probably blow harder without raising the pitch so much.

Stable low notes.

Reedier, noisier, tighter, good focus of sound.

Thicker walls crack easier.

Shallow walls help to overblow at expense of low note strength.

11. VERTICAL OR SLANTING SIDES TO THE WINDOW ?

Raises Pitch if slanted. Increase of volume if slanted.

Vertical sides help to concentrate the sound.

Historical instruments have nearly vertical sides to the window.

Slanting increases the volume, but if taken to excess, makes the sound impossible to voice for good focus.

Little effect.

90 degrees - Reedier, more chuff on sound.

Slanting - open, coarse, no chuff, lacks definition and focus.

Almost vertical is best for tone.

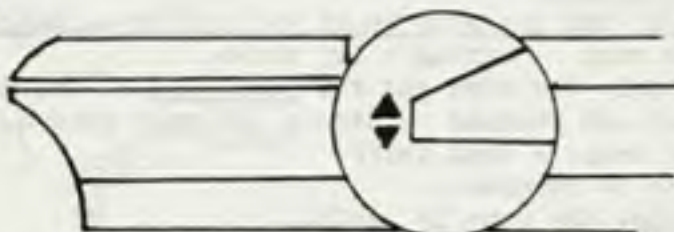
Vertical - more stability in lower notes - can't blow harder without overblowing.

A little slanting is visually desirable, but if overdone it looks ugly.

Influences stability, focus and pitch very much - if slanted it sounds 'Blahhh'.

Slanting - very bad.

Slanting lowers the impedance of the opening and gives some of the effects of lower walls.

12. THICK OR THIN EDGE TO THE RAMP ?

Too thick - Coarse tone. Too thin - Weedy.

Very important.

Any roughness or excessive sharpness is detrimental.

Thick edge would sound like a bad flute - noisy tone.

Thin edge - clear tone and more precise attacks.

Better overblowing with thin edge, brighter tone.

Too thin - edge becomes fragile and prone to warping.

Too thin - edge noise, particularly on 10th. note - hissing, oversensitive.

Thin edge - more overtones and more penetrating.

Thick edge - less overtones.

Deflection of air-sheet in unwanted directions with both too thick and too thin.

Thick edge - slow speech, bad articulation and slurring.

Best if rounded slightly.

Thick edge - doesn't sing, clothed sound.

Should be thickness of thin card.

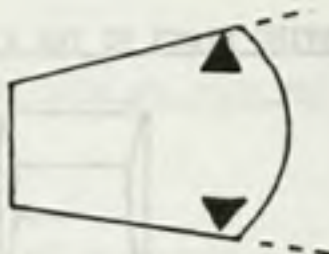
Should be $\pm 0.2\text{mm.}$

More trouble with unwanted noise on Renaissance instruments with thin edges.

If step is 0.9mm. , start edge at 0.38mm. and work thinner.

There is an optimum thickness, either side of which purity of tone suffers.

Both too thick and too thin creates unwanted noise.

13. WIDENING THE TOP OF THE RAMP ?

Little effect within reasonable limits.

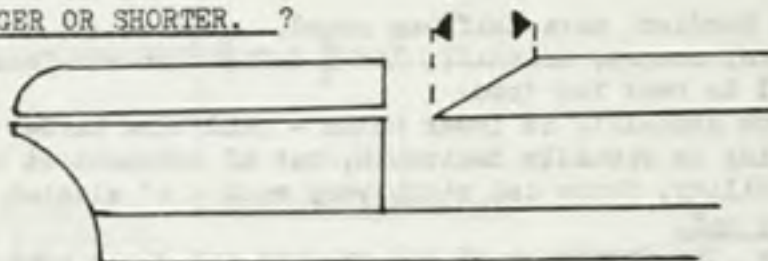
Louder.

The natural outcome to a slight slant to the sides.

The ramps on some old instruments tend to curve very slightly outwards.

Increase of 1mm. in width is O.K. - sounds 'Blaahhhh' if too much.

Parallel sides sound plain - Too much widening sounds plain ! Slight widening only.

14. MAKING THE RAMP LONGER OR SHORTER. ?

If too steep or too long - unsightly.

No difference.

Too long and the edge would be fragile - danger of warping.

Longer ramp - stronger low notes.

Maybe only the edge and the first bit of the ramp is important ?

Shorter and thicker - strong but poor speech.

Longer ramp - less chuff.

Depends on recorder.

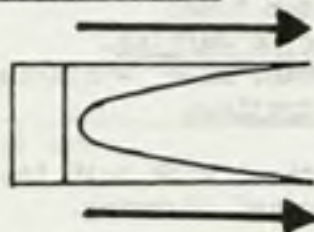
Hollowing the ramp is useful.

Convex ramp is detrimental.

Does it make any difference apart from the sharpness of the edge ?

More pointed - brighter sound.

Too long and sharp - danger of unwanted noise.

15. LONGER ARMS TO THE 'CANDLE-FLAME' ?

Terrible modern factory recorders.

Rore is disrupted - therefore the tuning.

Not critical - Not much difference.

On most original recorders the 'candle-flame' is very short, less in length than the width of the window.

Tonally very little difference.

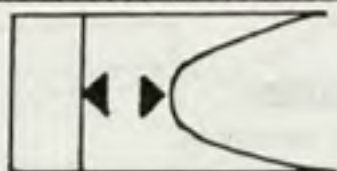
As a rule, keep as short as possible.

Very bad.

Too short causes inconsistency of tone and other problems.

Is it important unless it affects something else ?

16. THE DISTANCE BETWEEN THE CANDLE-FLAME AND THE EDGE ?



Affects the height of the edge from the floor.

i.e.



Not critical.

The shorter the better.

Better tone if shorter.

If too long, and too much wood removed - danger of warping.

A long candle flame interferes with bore diameter.

Difficult to voice if candle-flame is far beyond window.

See Question 15.

Longer - gives more sound in lower octave -but makes 3rd. register difficult to speak.

There are some originals with a little distance between window and candle-flame, but naught is best.

17. HOLLOWING THE ARMS OF THE CANDLE-FLAME ?



Not important.

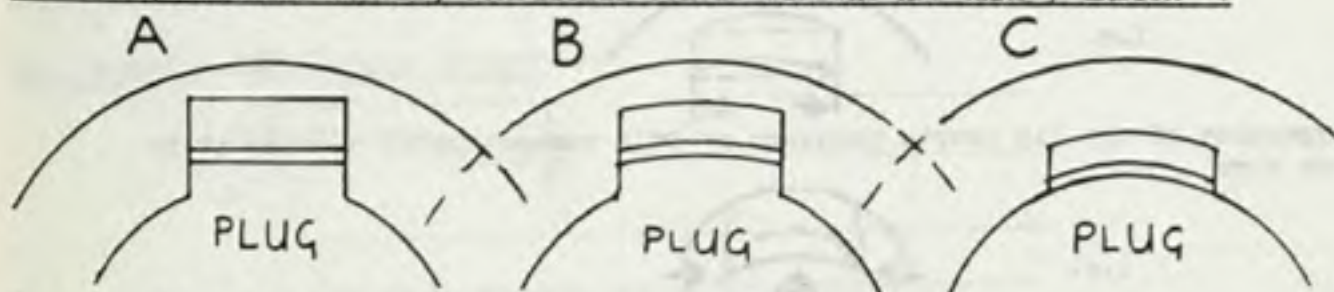
Yes, curve them downwards.

As with most other aspects, hollowing is best - clear air flow.

Often improves tone.

A danger of the labium becoming too thin.

18. FLAT, SLIGHTLY CURVED, COMPLETELY CURVED WINDWAY AND RAMP / LABIUM ?

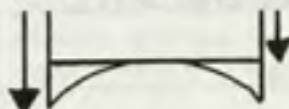


Not critical except in terms of time and construction.

A. FLAT - Takes longer to cut windway for poorer result.

Window walls are shallower because the sides of the labium are higher -

i.e.



Tendency for the lip edge to sag.

Tendency for the roof of a flat windway to sag.

Question 18. continued.A. FLAT WINDWAY AND RAMP / LABIUM continued.

Tendency for the windway to block with moisture.
 A pooh-poo sound with not many overtones.
 Second best.
 You need to remove more wood under the lip to get a flat edge.

B. SLIGHTLY CURVED WINDWAY AND RAMP / LABIUM.

More beautiful !
More stable in construction - everything else is speculation only.
 Little difference between more and less curvature.
 Gives more surface width to the edge than a flat one.
 Dissipates moisture particles more effectively.
 Best.
 Is normal for Baroque recorders and works well.
 Better response and stability than A.
 Diameter of the windway twice that of the bore is average for historical instruments.
Stronger in construction and not prone to sagging or warping.
 Need to remove less wood under the lip than for A.
 Most people think a curved windway is a 'Good Thing'.
 Maybe a curved sheet of air has more stiffness and springiness than a flat one, giving greater control over the air column resonance.
 Also, a spring which curves in such a way as B. (think of a metal tape measure) has more stiffness in that direction than the other, so the oscillation of the air-stream will tend to have assymetric amplitude and might affect the tone.
 Some Baroque recorder windways are curved at the blowing end but gradually become flatter (some Denner, Terton).

C. COMPLETELY CURVED WINDWAY AND RAMP / LABIUM.

Useless folk instrument.
 Can become silent after only a few minutes playing owing to the stresses caused by the effect of moisture on the wood -
 - Expansion of the plug and windway causes them to flatten

i.e.

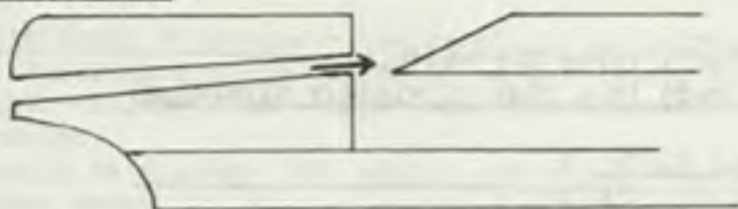


- Expansion of the lip exerts pressure at it's weakest point causing it to curve more

i.e.



- so all the breath goes below the lip !
 Too reedy a sound, like a string instrument - does not blend well.
 A very stable sound because of the high walls.
 Sounds nasal.

19. ANGLE OF WINDWAY UP ?

Most of the air-sheet would go out of the instrument, with hardly any sound - level is best.

Is characteristic of good Baroque recorders - but only very slightly bent back.

Very difficult to measure, so most people ignore it.

More richness in overtones.

Same effect as having the lip edge low compared to the windway floor ?

Better response of bottom notes with narrow windways - but more important - tone is more stable for changes of dynamics.

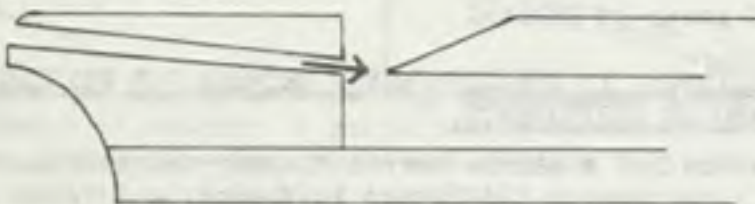
Minor up or down - little effect - 2 degrees either way.

Steeply up or down affects speech, noise and articulation.

Up is better than down but level is best.

Creates turbulence.

No angle, or only slightly up, otherwise always problems with speaking, especially with the upper register.

20. ANGLE OF WINDWAY DOWN.

If slight, no difference.

If exaggerated, too much air directed into instrument.

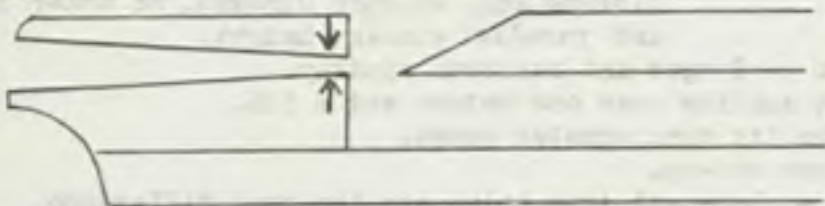
No !

Easier response of upper notes but more sensitive to pressure.

Weak tone, especially low notes.

Angle on many Renaissance instruments points down slightly.

If windway pointing down - easier high notes difficult low notes, lots of other noise.

21. TAPERING THE WINDWAY HEIGHT ?

A large taper makes the direction of the air-stream at the windway exit difficult to control.

A reverse taper would produce a hopelessly diffuse air-stream, and a perfectly parallel windway would produce a good air-stream, but is difficult to achieve and may distort. So there should always be a slight taper.

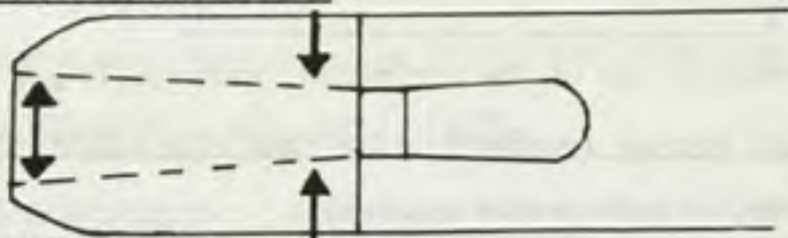
A slight taper seems to focus the tone better - increases effective pressure at the window.

Too much taper would give rise to hoarseness of sound, since airsheet would scatter too rapidly at exit.

Question 21. continued.

Only necessary if you don't taper the width.

If there is no taper, there is a risk of windway diverging.

22. TAPERING THE WINDWAY WIDTH ?

Easier to get high notes.

Avoided - deleterious effect.

Gives excellent focus and acts as a reservoir.

A taper helps to get a snug fit.

A slight taper helps to prevent the windway diverging.

For recorders with a narrow windway a gives gives more precise response.

Gives strong wind compression.

Limits the size of the labium width, giving a small, still voice. No point in doing this.

A windway with a slightly progressive taper is probably ideal.

More concentrated tone.

More resistance for breath.

Gives more pressure and power at labium.

23. WHAT, IN YOUR EXPERIENCE, IS THE DIFFERENCE BETWEEN THE VOICING OF RENAISSANCE AND BAROQUE INSTRUMENTS. ?

I thought Baroque recorders had a narrow curved windway and Renaissance ones were more open, until I saw some of the latter in Vienna, and found a greater similarity than I had expected.

Baroque windways point very slightly up, and Renaissance windways point very slightly down - but only a very small difference.

Original Baroque instruments had a much smoother finish generally - maybe because they are nearly all boxwood. But the windways on Renaissance instruments were very smooth, and the end of the block very neat and perfectly in line with the edge.

Some original instruments, both Baroque and Renaissance, were very clumsily voiced.

Renaissance instruments - Block further forward, less constriction at the blowing end, shorter windway, no upper chamfer, and parallel windway height.

Baroque instruments - longer and narrower windway.

Renaissance - best quality over one octave and a 5th.

Baroque - best quality over greater range.

Renaissance - longer cut-up.

Little difference - bore and tone holes are the real difference.

Most factory made 'Renaissance' recorders are too small in their windways - only good for little school girls.

24. IS THERE ANYTHING ELSE YOU COULD ADD ?

It is very difficult to separate components of an integral system.

Each type of instrument needs different bevels, step, windway height etc..
Windway height, windway floor, upper and lower bevels - depend a lot on angle of windway.

Components could be divided into static and adjustable parts -

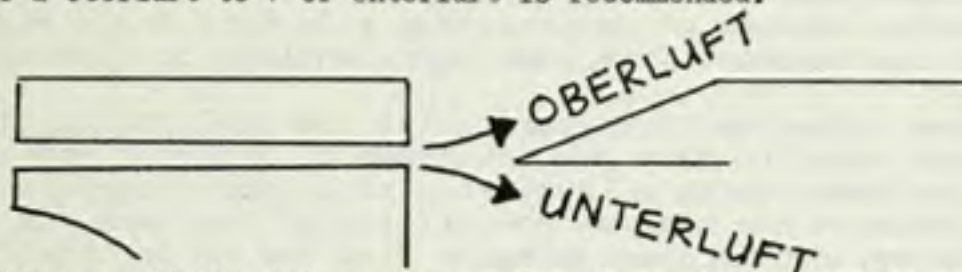
Static - Copy something good - Length of windway, Width of windway and window, Length of cut-up, Depth of window walls, Angle of window sides, Width and length of ramp, Length of candle-flame, Curvature of windway, Angle of windway.

Adjustable - Start at average and adjust as necessary - Windway ceiling, Windway floor, top and bottom chamfer, thickness of lip edge, Hollowing under lip.

The for/aft position of the block is very important for the balance of harmonics.

The smoothness of the windway surfaces is very important - to prevent turbulence.

A ratio of 2 Oberluft to 1 of Unterluft is recommended.



The variables are highly interactive, and a change in one can be compensated for by a change in another - particularly curvature of the windway floor and ceiling, bottom chamfer, depth and sloping of window walls.

Grain direction of wood is very important -

i.e.



Ivory around the mouthpiece helps to maintain the dimensions.

The voicing of a recorder seems to be a very complicated affair, and a balance between all the factors must be achieved.

Each one taken separately has not much meaning.

***** END *****

Review of: "Beiträge zum historischen Cembalobau" Hubert Henkel.
Volume 11 of the series "Beiträge zur musikwissenschaftlichen Forschung in der DDR". Leipzig 1979.
DM 36,- from Das Musikinstrument, Erwin Bochinsky
Verlag, Klüberstraße 9, D-6000 Frankfurt am Main 1.

This book is a shortened and somewhat modified version of the dissertation for which Hubert Henkel was awarded his doctorate. The other part of the dissertation appears as the catalogue of the harpsichords and virginals in the Musikinstrumenten-Museum, Leipzig. There are as a result of this separation some places where the "Beiträge..." explain the thinking behind material introduced in the catalogue. In any event the catalogue is an indispensable work, but the reader of the "Beiträge..." will often wish to refer to it for more information on the instruments mentioned in the text. Sections on English and French instruments were omitted for reasons of length; thus this book deals mostly with Italian instruments, with some contributions on Flemish instruments.

Any review appearing four years after the publication of the book is almost bound to have the advantage of a better understanding of the problems, or have available to it more complete information than at the time of the writing of the book. It would, therefore, not be surprising to find faults in this book, but rather than deal with these in an unhelpfully brief list of errors, I have chosen to undertake a more substantial review of several important topics. The main part of this review is divided into four sections:

- I Stringing Problems
- II A List of Italian Instruments
- III Keyboard Ranges and Pitch
- IV Scaling Curves ("Mensurkurven")

Henkel has organised the form of this book to follow the construction of an instrument, thus it is subdivided into four sections: the raw materials, the workshop, instrument making methods, and finally, the instrument and its various component parts. In working his way through the subject he approaches the problems "as an instrument builder makes his instrument", but also with a view towards other difficulties: many instruments are kept in museums and restorers faced with the task of conservation or restoration require a great deal of information in order to execute their work properly. Henkel sees an obligation upon researchers to cooperate with restorers in order to make this exchange of information possible. This book is intended as an example of how research may assist the restorer by providing specific information. This ideal is strongly endorsed by the reviewer especially since much keyboard restoration is undertaken by restorers who are not specialists in that field. If employed by museums, their terms of reference are usually wide, to cover several types of instruments. It is hardly possible that a restorer can have the breadth of knowledge to be an expert in each field in which he must work. Restorers are paid to restore, not to travel to other museums in order to expand their knowledge of the subject. Henkel's approach to this problem of making information available to the restorer is strongly to be welcomed, and where his own information falls short of providing the necessary guidance,

this should encourage further our efforts of cooperation and the sharing of information.

I Stringing Problems

With the aim of giving the restorer practical guidance on the type and thickness of strings to be put on instruments, Henkel tackles the question of stringing. He has collected a great deal of material together, both documentary and from instruments, and show himself to be aware of the difficulty that some sources should not be simply accepted at face value, as, for example on p 37, that Beck might have drawn his information from the same source as Egen, so that there is a duplication rather than a confirmation of information. On p 33 Henkel brings a demonstration of the thesis (1) that lightly-built Italian instruments were lightly strung, and furthermore, by comparison, German instruments were more heavily strung. Here he compares four Italian harpsichords with two German spinets all of which have gauge numbers marked on them; the originality of the gauge numbers is not discussed. Henkel's comparison rests upon the assumption that numerically equivalent gauges can be treated as dimensionally identical. This is a puzzling contradiction in view of his clear statement on p 22 that any standardisation of wire sizes at this time would have been unlikely. Even if one leaves this problem aside and assumes that the gauge numbers can be directly compared, there is a further difficulty which is crucial. Hubbard's thesis requires, if it is to have any sense, that we understand that with thicker cased instruments, the strings should be heavier in order that more energy is imparted. (2) This means that we are interested not simply in the diameter of the wire, but also in the tension; in order to calculate this we have to know the string lengths involved; (we can assume an arbitrary pitch). Thus, a comparison of gauge numbers alone has no sense without a consideration of the string lengths as well. According to Henkel's analysis the Italian instruments are more lightly strung in the bass than the German ones; however, when the string lengths are known and the tension calculated, then it turns out that as a consequence of the longer strings of the harpsichord in the bass, the Italian harpsichord (one of the examples is by Cristofori, Leipzig Cat. No. 84) would have had a tension of about 4 kg more than the German spinet (Christoph Heinrich Bohr, Leipzig cat. No. 56), even though the wire is one gauge number lighter. Despite all the tables of possible wire gauges there can be no credible stringing recommendations for the restorer based upon such incorrect analyses.

II A List of Italian Instruments

Another subject of interest in this book is the list of Italian harpsichords and virginals, the fullest available in print. As many of the problems of pitch in connection with Italian harpsichords and virginals have been complicated by insufficient or inaccurate information on the original state (i.e. scale, compass and disposition) of the instruments, all new information is to be welcomed. Henkel expresses himself carefully in describing the list as of all the dated Italian harpsichords and virginals which "are regarded as original" and hedged with "as far as I know". He is prudent to express such caution since Italian 16th and 17th-century instruments are a veritable trap for the unwary, despite his best endeavours, there are a number

of mistakes: it is important to recognise that much of this information has been taken from previously published sources and is therefore no more accurate than the sources themselves. Sometimes it is less accurate: e.g. the 1561 Franciscus Patavinus harpsichord is given as having a C/E-c' compass, but the present compass is G₁/B₁-c' as can be inferred from Hubbard. (3) Another example is of the 1521 Hieronymus Bononiensis harpsichord: Henkel has made reference to an article by Barnes where Barnes' opinion was given of the original scaling. Nevertheless, Henkel gives the present, non-original compass and scaling (4). A common mistake to be found in the list is where an instrument has been altered, but the alteration has not yet reached public notice. The 1554 (given incorrectly by several sources as 1553) Dominicus Pisauri.(ensis) was originally C/E-c' and 1 x 8', 1 x 4' rather than the present C/E-d' and 2 x 8' as given by Henkel. (5) This error emphasises the difficulty of relying on published material; there are many more mistakes of this type in the list. Where the instruments concerned are in Leipzig it is quite a different story. Henkel has been extremely diligent and observant in bringing evidence of these instruments to test the various arguments and conjectures he examines in this work. The reason for all this is quite clear: East European governments do not encourage foreign travel for their citizens. In this case the loss has been to organology since this book would undoubtedly have been better in many respects if more evidence from outside Leipzig had been gathered. However, the influence of the printed word is such that the errors Henkel repeats here (even unwittingly) will be repeated elsewhere, perhaps also because of the apparent authority of the large amount of material collected together here.

There is one other source of confusion which should be mentioned: whilst it is the usual practice to give the length of the long c² string of an instrument (where there is more than one unison choir of strings) Hubbard and Shortridge give the length of the short c². (6) Whatever the merits of doing one or the other, it is a simple matter of statistical propriety to compare like with like. Some instruments on Henkel's list are of the short c² and some of the long c² lengths, without any acknowledgement of the difference of measurement method. In itself the difference is small, but with other inaccuracies it can lead to accumulated errors in estimating the pitches of instruments.

It would be unfair only to dwell on the mistakes in this section. Henkel correctly recognises that the "typical" Italian disposition of 2 x 8' does not appear often until the 17th century, which is an important correction to the views of Hubbard and Russell. (7) Although Barnes drew attention to a number of alterations to 1 x 8', 1 x 4' harpsichords, (8) Henkel deserves the credit for producing a more detailed analysis of the instruments of the 16th century than previously available. It is a pity that here, as on some other excellent observations, there is not the emphasis in the text that the significance of the statement requires.

III Keyboard Ranges and Pitch

This book is not notable for the discussion of ideas or problems; instead it concentrates more on details. It is disappointing that more discussion is devoted to balance points of keyboards than to the various keyboard types, since in this matter are some of the essential difficulties in the problem

of Italian pitches and the use of keyboards in the 16th and early 17th centuries. We are told, for example, that a keyboard extension down to G_1 first took place in the middle of the 17th century; this statement is contradicted by the list given on p 120 where a Celestini harpsichord is given (correctly) as having had a compass from G_1 - f^1 (in fact the G_1 is not present, a common Italian practice). Henkel writes that keyboards were first extended to G_1/B_1 and then to G_1/A_1 (i.e. without G_1). The compass G_1/B_1 is in fact less common as an original compass than G_1/A_1 , and in many instances represents a rebuilt 50-note instrument with compass C/E- f^1 . Documentary evidence would suggest that a compass starting at G_1/A_1 was known at least as early as 1539. (9) The Celestini 1605 harpsichord is the earliest known example of this compass. (10) It is clear from Henkel's list that many 16th-century instruments had a compass reaching to f^1 ; later in the 17th and 18th century this is often only to c^1 . This is an important detail to record and explain since it is the groundwork for discussions of pitch and the use of instruments.

It was indeed a consideration of the different groups of compasses, with G_1 and C/E bass octaves or c^1 and f^1 trebles which brought about the hypothesis that a type of compass was related to a specific pitch. Shortridge and Barnes (11) made similar suggestions in the early 1960's that there was a correlation between long-scaled instruments and f^1 compasses, short-scaled instruments and c^1 compasses, so that the f^1 instruments were in fact low-pitched "transposing" instruments. Van der Meer (12) subsequently found the weakness in the argument by showing that this correlation between compass and scale was not as good as Shortridge and Barnes had hoped to show. Henkel continues this line of attack with more examples of instruments which do not fit the pattern required by the hypothesis, but makes a new contribution in that he believes it is necessary to date the unsigned and undated instruments in order to solve the problem of the correlation of compasses and scales. Relying on a quotation from Russell that around 1630 low-pitched instruments were becoming obsolete, Henkel decides that long-scaled instruments which are not dated must have been made before about 1650; thereafter, instruments with keyboards to f^1 do not need to be brought into the discussion of possible "transposing" instruments. It seems that Henkel is very probably right in assigning undated, long-scaled instruments to the first half of the 17th century, but this in itself doesn't seem to solve anything. Indeed, Henkel makes no specific formulation of the problem so that it is hard to level any criticism at his ideas. Putting undated long-scaled instruments into the first half of the 17th century doesn't tell us anything more about the relationship between compass and scale than has already been the subject of considerable debate.

The explanation of low pitches and "transposition" in Italian instruments has in the intervening years since its formulation probably fallen from favour (although it is difficult to know exactly how many people might subscribe to the idea). That Henkel continues the criticism of these redundant explanations does not in itself render his contribution irrelevant; it is the lack of a discussion of alternative interpretations which renders this section weak and superficial.

We are told that low-pitched instruments were in use until about 1650, and it is confirmed that some high-pitched instruments were in use at the same time, with the same compass C/E-f³. Why these compasses were used when there was virtually no written music using notes above c³ is a question urgently requiring an answer. What makes this section more unsatisfactory is that it does not even acknowledge the existence of other explanations of the scales, compasses and pitches to 1650. There is, for example, no reference at all to the article by Thomas & Rhodes (13) suggesting that some long scales were not in fact evidence of low pitches but of the use of iron wire. Whether one agrees with the arguments or not is quite another matter, but they are too important to be ignored. It is hard to explain this omission, especially as there is evidence quoted in this book for the use of iron wire by some Italian makers. It seems that by dividing the book into small sections an overview of what has already gone before has been lost.

IV Scaling Curves ("Mensurkurven")

Readers of the Leipzig catalogues "Kielinstrumente" and "Clavichorde" may have been puzzled about the curious saw-toothed curves presented at the back of the books. An explanation of their origin and the uses to which they can be put will be found in the "Beiträge..." on p 143-145. The formulae as written are not complete. (14) They are a novel way of representing the scale progression of an instrument. If the scale is "Pythagorean" or constant (i.e. doubles its length with each octave drop in pitch) then the curve will run parallel to the x axis; that is, it will be a straight line. Thus any deviation from Pythagorean scaling will be shown as an inclination from the horizontal. It should be possible, according to Henkel (p 145) to read off the point of change from iron to brass wire; the expression of location of the changeover point is not clear in the text, but Henkel appears to have in mind that where the foreshortening stops and the scaling becomes constant (i.e. approaches a horizontal line) is to be found the changeover point. Following this method for the curve of the Leipzig No. 91 Gräbner harpsichord and No. 371 Kirkman harpsichord, one would infer that the changeover occurs at about c¹. However, evidence of stringing lists, both documentary and those found on instruments in the form of gauge numbers, establishes the principle that the material changes from the weaker to the stronger (i.e. from red brass to yellow brass, and from yellow brass to iron wire) as soon as the scale becomes too long for the material at that particular pitch (this description visualises the progression from the bass to the treble). This changeover point between iron and yellow brass is usually at about c², which is an octave lower than inferred from Henkel's method. (15) The progression of the scale beyond this point, will for practical reasons not be constant until some point further towards the treble. Such a break as Henkel describes would only be possible if there were a break in the bridge.

Henkel also explains how such curves can reveal that scalings have been altered. One of the best examples is the Leipzig No 69, Vincentius Pratensis, where the graphical representation yields the information that the tenor scale is longer than in the treble; that is, that the treble scale has been altered. However, one does not need to go to the enormous effort of producing such a curve in order to reach this conclusion;

simple calculation of the scale of c compared with c^2 gives the same result. It is pretty clear that Henkel having devised this new way of representing scalings wishes to show that it is a useful analytical tool. The invention seems to have preceeded its necessity since these curves do not reveal any more than one might find out with much simpler methods. In some respects they can even be misleading; an interesting example is the Leipzig No 73, Giusti harpsichord. As a result of examining the 8' and 4' curves and finding that they followed each other closely, Henkel supposed the 4' to be original and wrote "This supposition was confirmed by an examination of other details" (p 145). However, if one were to take an instrument which had been designed differently, where the 4' is not an exact halving of the 8', but uses the space on the soundboard to have less foreshortening in the bass, then the 4' and 8' curves would not lie close together; the 4' curve would cross the 8' curve in the bass. (16) Curiously enough Henkel introduces exactly such an example to attempt to prove that the 4' is not original on the Leipzig No. 79, "Baffo" harpsichord. Later, in the catalogue of the collection, after close examination, the 4' is described as being original and there is no mention of the 4' as having been "denounced" as unauthentic in the "Beiträge..." As a result of having pre-conceived ideas of how a 4' scale should be designed, Henkel was led to miss the obvious organological evidence and rely on the interpretation of the scaling curves.

In handling some of the larger themes Henkel is not as sure as when working with finer detail. He presents some interesting information on guilds which I had not seen before. His section on "Plectra" is illuminating of his method. Nowadays, probably few of us would support the idea that sole leather was used in old instruments for plectra, but how many of us could bring proof to bear that it was not an original practice? Hubbard, for example, gave credence to the idea that it might have been used originally. (17) Henkel, who has already shown his dependence on Hubbard in this book by extensive quotation, is not afraid to contradict the Authority and with commendable thoroughness deals with documentary sources and the jacks themselves with their altered tongues to show that there is no good evidence for leather plectra having been used. Some interesting calculations are made about Cristofori's workshop and the number of instruments he made in a year; these ideas could well be pursued further. In the description of details of construction Henkel is almost always reliable since he works from the evidence of the instruments in the Leipzig collection. Thus Henkel's book should be seen as superseding Hubbard's chapter 1 as an authority on Italian instruments. Two recently published books would have been more accurate on some details if the authors had read Henkel instead of relying on Hubbard. (18)

As the supply of information on harpsichords is surprisingly limited (in view of their popularity), I don't think the question arises as to whether one should buy this book or not. Even if one cannot read German, the lists of instruments and the documentary references can be extracted and are well worth having. It is a pity that there isn't a bibliography to list the large number of works cited; I failed to find the exact reference given for an important article by Van der Meer, "Studien zum italienischen Cembalobau" which appears in the Festschrift für

Ernst Emsheimer, Stockholm, 1974. Despite its faults the book will certainly stimulate the reader's thinking, as it did mine, and also provide him with a vast amount of useful information.

Footnotes.

- (1) He appears to be echoing Hubbard's idea that "the light harpsichord will demand a thinner string than the heavier harpsichord." F. Hubbard "Three Centuries of Harpsichord Making" Harvard 1965, 4/1972, p 9. I have collected some evidence from gauge numbers of Italian instruments that this principle was not recognised by at least some Italian makers. See "Considerations on the categorisation of Italian harpsichords" Proceedings of the Premeno Conference 1982 (published by Scuola di Liuteria, Milan; in press).
- (2) Strictly speaking, the heavier string is not the ultimate source of energy: the string must be plucked harder to impart more energy to the soundboard, and if the string is under more tension, then more energy is required to deflect it. Ultimately, the question of the energy input may be dependent not on the diameter of the wire, but the maximum acceptable force required to play a note. This relationship between wire size and plucking force is not discussed in O'Brien's argument in "The Stringing and Pitches of Ruckers Instruments" where it is suggested that instruments were heavily strung in order to be louder. For a technical discussion of the relationship of wire size and plucking force see N.H. Fletcher, "Analysis of the Design and Performance of Harpsichords" *Acustica* 37(1977), p 139-147.
- (3) Hubbard op. cit. compare p 27 and p 38. The keyboard is not original. According to my examination of the instrument it was originally C/E-f'. For more details see my "The harpsichord in Frescobaldi's time; a problems of string measurement and keyboards" Proceedings of International Frescobaldi Conference in Ferrara, 1983 (in press).
- (4) Even this estimate of J. Barnes in "The Specious Uniformity of Italian Harpsichords" in "Keyboard Instruments", Dover 1971, 2/1977, has been superseded: based on new evidence brought to light by W. Debenham, I have suggested another compass of C/E-f' and $c^2 =$ (approximately) 285 mm. This note is on file at the Victoria & Albert Museum.
- (5) See also my paper op. cit. footnote 3 for more details on this instrument.
- (6) Hubbard op. cit. p 7. J. Shortridge "Italian Harpsichord-Building in the 16th and 17th Centuries", Smithsonian Institution Press, 1960, 2/1970. Shortridge does not actually state which c^2 string was measured, but it is clear from the example given.
- (7) Hubbard op. cit. p 6. R. Russell "The Harpsichord and Clavichord" London, 1959, 2/1973, p 29.
- (8) Barnes op. cit.
- (9) V. Gai "Gli Strumenti Musicali Della Corta Medicea" Florence 1969, p 9. The instrument is a harpsichord signed "Dominicus Pisauriensis MDXXXVIII" with compass G_1, A_1-a^2 . The vital question is whether this instrument had been altered by the time the inventory was made (1700). Two details suggest that it had not: firstly, the disposition was still $1 \times 8'$, $1 \times 4'$ whereas most instruments of this specification were modified to $2 \times 8'$ in the 17th or early 18th century, and secondly, supposing that the compass were originally C/E-f', then the modification one would expect is to G_1/B_1-c^1 . Furthermore, the length of

of the instrument (about 2,50-2,60 m) is compatible with an instrument to G₁.

(10) Although doubts have been raised that such a large keyboard range with this date could be original, I was recently able to satisfy myself that the compass is original, beyond any doubt. I am obliged to Grant O'Brien for the information that a harpsichord in the Museo degli Strumenti Musicali in Rome with the compass G₁, A₁-c₁ was made in the 1630's; the last digit is illegible.

(11)¹ Shortridge op. cit. J. Barnes "Pitch Variations in Italian Keyboard Instruments" Galpin Society Journal XVIII (1965) p 110.

(12) J.H. Van der Meer "Harpsichord making and Metallurgy-a rejoinder" G.S.J. XXI (1968)

(13) W.R. Thomas and J.J.K. Rhodes "The String Scales of Italian Keyboard Instruments" G.S.J. XX (1967) p 48.

(14) I am obliged to Johannes Biener for drawing my attention to these errors. The complete formulae should read:

$$n = \frac{1}{2l} \sqrt{\frac{p}{m}}$$

$$n = \frac{1}{ld} \sqrt{\frac{gp}{\pi s}}$$

$$p = \frac{n^2 l^2 d^2 s \pi}{g}$$

(15) See G.G.O'Brien "Some principles of eighteenth century harpsichord stringing and their application" The Organ Year Book 12 (1981).

(16) This is in fact the design principle adopted for 16th-century Italian 1 x 8', 1 x 4' harpsichords.

(17) Hubbard op. cit. p 17.

(18) F. Hammond "Girolamo Frescobaldi" Harvard 1983 and S. Leschiutta "Cembalo, Spinetta e Virginale" Bèrben 1983

Review of: Tibia-Calendarium 1984, Moeck Verlag.

Is a calendar a suitable subject for a review? Last year, I mentioned the Moeck calendar at the end of the Bulletin because it happened to arrive the day I was finishing it off. This year I thought I'd do it as a review, partly because it's just as beautiful and partly because it is accompanied by a little booklet with full information, by Dr. Moeck and translated into English by Katherine Loewe, on the pictures, their painters, and the instruments. There are thirteen, one per month and a cover. Unlike last year, they can't be turned over without obscuring the hanger, but have to be torn off. One complaint about many such calendars: obviously many of us archive the pictures, and often the format is uncomfortably large for this. The obvious solution is to cut off the date part of the page, once the moth is over, but if one does that, one cuts off the bibliographic information as well. So why not print the information behind the picture, rather than behind the dates?

The descriptions (which are translations of those in German on the back of each picture) are occasionally deficient. October, for instance, which shows the earliest known bassoon whisper key (Felix Reiner by Horemans, 1774), with a long lever for the upper thumb, is said also to show violins, viola and cellos, in fact shows violin, two sizes (still) of viola and a bass. September, a flautist playing with a violinist, with an unoccupied gamba awaiting its player, the 'gamba' seems only to have 4 pegs (the top of the scroll is outside the frame) and thus is presumably a cello, and the flute looks very long; isn't it one of the flûtes d'amour so recently well written up in Tibia? And August, which shows the well-known Weigel clarinetist, does not mention the presence, at this quite early date (ca.1720) of the low E/b key at the back for the lower thumb, which I must confess I'd never noticed until somebody pointed it out to me a year or so ago. Many of the paintings are, as so often, frustrating because of where the painter stopped. Quantz, for example, (April) is holding a boxwood flute with tuning barrel which is cut off below the top finger hole, so has it one or two keys? The painting is not dated, so I suppose it's not too serious a point. Is Fischer's piano (February), made as may be seen from the nameboard, by Joseph Merlin, an early upright of some type? Either Fischer was very short in stature, or the piano is very high off the ground for a grand.

A very pleasant production, and one which will be a continuing pleasure throughout the year, and in the illustration files thereafter.

Review of: R.L.Barclay, ed, Anatomy of an Exhibition: The Look of Music, International Institute for Conservation - Canadian Group, Box CP 9195, Ottawa, Canada K1G 3T9, 149pp, 41 figs, no price stated.

The history of the recent Look of Music Exhibition, written with unusual frankness, by almost all of those involved in planning, mounting and running it. The biggest surprise is the 'almost all', for the one person I had expected to be involved, with whom we at the Bate and I'd have thought most museums had had the most contact both in person and by correspondence, was Phillip Young, who I thought had chosen all the exhibits himself and certainly who had compiled the Catalogue. He gets referred to from time to time, almost in passing, but he is conspicuously absent from the list of authors; I wonder why? After all, the selection of exhibits and authorship of the

catalogue are keys jobs; without the former, at least, there would be no exhibition.

While the book is of prime interest to museums and their personnel, it is of interest also to many of us for the sections on Packing and Air Transportation (worth reading for anybody who sends valuable instruments overseas) and on Conservation. In particular, it is essential reading for anyone who is ever asked to lend an instrument (or several) to any museum or other institution for exhibition. I would hope that every museum curator or other worker would read it and would note all sorts of points and details. There seems little point in going into damn, that's the second o this machine has punched out) many of them here, since we will all pick out our own (the idea of sheets of glass 12 foot by 6 foot and only 6mm thick terrified me when I read it; ours are all 10mm and the biggest is 2m square). Much of the display notes, especially the design of mounts, is of interest (many of my ideas here I owe to Bob Barclay, the editor, after the CIMCIM Scandinavian tour); much of the information on packing is important (I was a bit shattered when our instruments came back from this exhibition simply rolled in bubble plastic and stuffed into cardboard boxes, but perhaps that's how the English packers had sent them); it's worth noting that the baggage handlers at Frankfurt airport are clumsy, certainly clumsier than those at Vancouver; it's also worth noting how badly some of the museum couriers behaved; and, glancing at a pile of unanswered letters, it's salutary to note how bad many museums were at answering important and urgent letters.

In sum, every museum should have at least one copy of this book, and any of you who are asked to lend an instrument to any museum further away than the next street must read it before you agree to lend.

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Jeremy Montagu

Review of: Peter & Ann Mactaggart, Painting and Marbling Harpsichord Cases, Mac & Me, Welwyn Herts, 66 pp, illus, 1983. £4.25 In UK, £4.50 in Europe, £5.25 in USA & Canada, £5.40 in Australia, post-free from the authors (but add £2 if you don't pay in sterling).

I said (Comm.399 in Q 26) that their first book (Laying & Decorating Harpsichord Papers, which by the way is now available in an enlarged and revised 2nd edition) was a must if you want to decorate 'Flemish' keyboard instruments. This book will be even more useful because it covers the decoration of all types of keyboards and, since Peter and Ann are the thorough sort of people that they are, it is a mine of information if you are painting anything at all, even the kitchen furniture. You could, of course, go round to the local D-I-Y shop and buy a couple of cans of paint and a can of varnish, but equally you could get raw colours, and natural resin, and grind the stuff up, mix it and make your own. Whichever you do, the information on how to do it is here, though as one would expect with a bias, and all the necessary information, on doing a proper job with the proper materials. As they point out, your walls have to be redecorated every few years, but a harpsichord should last, and so should its paint job, for a century or two. Modern paint from the D-I-Y shop won't last that long, but the traditional materials will. The book is full of useful tips, as well as the more formal instruction, and also there are many useful warnings ("In the past it was by no means unusual for a varnish maker to put himself out of business with a fire..."), covering techniques of painting, some learned by bitter experience, as well as general safety matters. Peter and Ann are highly exper-

enced at decorating instruments, and they have put everything that they know, and everything that they have learned from trial and error during their own work, into this book. As a result it is a combination of scientific knowledge and craft experience; nothing could be better.

It would be unkind and unfair to call it an idiot's guide because it is a guide for everyone, experienced or otherwise. However, it is written so clearly that the complete beginner, even an idiot, could follow it and learn how to do the job properly. I will admit that when I made my own drums (I didn't put anything about decoration into Making Early Percussion Instruments) I bought my paint at Woolworth's from the decorator's counter; if I want to do the next ones properly, everything that even I need is here. The book will be all the more useful to the rest of you who are proper makers.

PS. Their next book will be on Practical Gilding, due out in the Spring. If you want to know what else they're planning, and would like to hear of new books as they come out, let them know; their address is in the List of Members. I have a suspicion, too, that they might be interested to hear of subjects for books in this sort of area which would interest you.

FoMRHI Comm. 519

Jeremy Montagu

Review of: Klaus Gernhardt, Hubert Henkel, Winfried Schrammek, Orgelinstrumente, Harmoniums (Musikinstrumenten-Museum der Karl-Marx-Universität, Leipzig, Katalog, Band 6), VEB Deutscher Verlag für Musik, Leipzig, 1983, 144pp + 80 pp of plates, DDR Marks 45.

How do they do it, and how do they find the time? Look round at the instrument museums of the world and see how many have catalogues at all. A fair number of us have check-lists (see my review of three quite different types of catalogue in Early Music, April 1983, pp. 241-243 for a discussion of the difference between a catalogue and a check-list), a few have proper catalogues, some way out of date (eg Brussels, the last volume of which appeared in 1922, Copenhagen, Paris and others even earlier); others have stopped, as far as we can tell so far, after one (eg Nuremberg and Vienna) or two (eg Berlin) good volumes have appeared to whet our appetites; at least we have something from these, and I'm not trying to be ungrateful for what we have. But Leipzig puts us all to shame. Volume after volume, fully detailed and fully illustrated, including in this volume (especially for the harmoniums) some drawings of the mechanisms.

As one would expect, this section of the Collection is rather smaller than the others (how many museums have the space for a full collection of organs, even if such a collection could be gathered together?), and it suffered rather worse in the War, though this volume includes, as do the other volumes, all the information that remains available, both from the old Kinsky Catalogue and from archival notes. For the instruments that do survive (2 organs, 12 positives two of which are described as Kabinettorgel, 1 regal and 33 harmoniums of various sizes and types ranging from very early instruments of the 19th century to the 1950s and 60s; those interested will be glad to know that the harmonium is obviously alive and well in East Germany), there are full descriptions and measurements, including for the organs the dimensions of usually two pipes in each octave in each register and for the harmoniums of reeds and their housings. Only on one point did I have a niggle: the pitches are given in the 800-900 Hz range, which means dividing everything mentally by two to see what the pitch

really is. Surely, with International Pitch expressed as 440 Hz, Diapason Normale as 435, and our customary acceptance of other pitches in the 400s, that is the more sensible octave to use for the publication of pitch?

Fewer of us are interested in organs than in the other instruments whose volumes have already appeared in this series (Vol.5: Horns and cornetts; vol.4: Clavichords, both reviewed in Q 33; Vol.3: Trumpets, trombones and tubas; Vol.2: Plucked-string keyboards - see elsewhere in this issue for a review of a companion volume to the latter - both reviewed in Q 23; Vol.1: Flutes, reviewed in Q 15), as can be seen from a glance at the List of Members. To those, I recommend this Catalogue unreservedly; to the rest I would say that just as the Mahillon Brussels Catalogue is a classic and should be on every instrument enthusiast's shelf, so this will be and so should it be, in all its volumes.

FoMRHI Comm. 520

Jeremy Montagu

Review of: R.J.M.van Acht, Volksmuziek en volksinstrumenten in Europa, Haags Gemeentemuseum, 1982, 80pp, 100 plates. No price stated, but available from Tony Bingham, 11 Pond Street, London NW3 2PN at £5 + £1 p&p.

The text consists of a brief description of the folk music of the different parts of Europe, and the instruments used, somewhat uneven in the amount of its coverage, but that's the fault of the writers of each area, not of Rob van Acht; areas that are well covered in the literature have more space here than the ones that aren't. This text fills the first fifteen pages. The rest of the book is the reason for commending it to you here: an excellent series of photographs, the majority of them showing instruments in use, many of them old photographs (some are engravings or other earlier processes). My only regret is that the list of the illustrations at the back has very little (sometimes no) indication of source, which makes it very difficult to follow up some of the more interesting ones. Some of the 13th-16th century illustrations are well known; others are not, which makes the book the more useful. Many of the 19th and 20th century illustrations will be new to most of you, as they were to me, and unless you know the Gemeentemuseum's collection well, most of the photographs of instruments will be new. I'm interested in instruments of all sorts, so I find the book well worth having; if you're only interested in the instruments of early art music, you won't want it, but if, as a good many of us have, you have wider interests, then at an average price of 5p a picture, whether you read Dutch or not, it's a good buy.

FoMRHI Comm. 521

Jeremy Montagu

Review of: Bernard Brauchli, recording of Carlos Seixas, Nine Sonatas for clavichord, EMI 11C 077-40569, available from Titanic Records, no price stated.

Interesting music by the leading Portuguese composer of keyboard music of the first half of the 18th century, well and convincingly played (convincingly that this is clavichord, rather than harpsichord, music in contrast with Scarlatti - or was Scarlatti writing for those dozens of Cristofori pianos they had in Spain?). The instruments used are unspecified and the recording seems to me to be too close and too loud; the sound has little chance to breathe before it is sucked into the microphone. Bernard's playing is always interesting, however, and the music is well worth hearing; there are over 100 Seixas sonatas, little known outside Portugal, and here are nine of them to sample.

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