FOMRHI Quarterly

BULLETIN 36
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FELLOWSHIP OF MAKERS AND RESEARCHERS OF HISTORICAL INSTRUMENTS

Hon. Sec. J. Montagu, c/o Faculty of Music, St. Aldate’s, Oxford OX1 1DB, U.K.
It won't surprise you to be told that I'm starting this a week later than I intended to. A good excuse though: we had the AGM of the Galpin Society here yesterday. If a museum hosts a meeting of the Galpin, or any similar society, the curator has only two options: either he goes off on holiday, like György Gabry did when he heard that we were coming to Budapest in 1968, or he works flat out for a week or so to make sure that everything is looking as good as possible. Either way, FoMRHI gets delayed for a week. In fact, I chose the latter course, and it's surprising how many little jobs haven't got done over the last few months, which must be done before they come; it's a bit like one's mother-in-law coming to stay (and I hasten to say that I am on excellent terms with both my mother-in-law and the Galpin Society and look forward to visits from them both).

Not as many people turned up as we had hoped that they might (the weather was so nice that there were many better places to be than in a museum, even so fascinating a museum as the Bate Collection), but any of you who read this and who had intended to come, but didn't, do come in another time.

SIZE OF Q: Unless Djilda is sitting on a stack of stuff, this Q, like the last one, is going to be a bit thin. So, may I ask you first to read the last section (headed FoMRHIQ) on p.3 of Bull.35, the last issue, and then to read on: What you don't write, we can't print. And I'll put it a bit stronger: we all have a duty to write. When I say that, I don't just mean those of us who are recognised as 'experts', whatever that means, nor just the Fellows, though it might be considered that they have a special duty to do so (and some of them do far more than others) simply because they do know rather more than the rest of us; that's why they're Fellows. I do mean all of us, simply because we have all learned from someone or from some-many. None of us learned everything we know by ourselves; we have all had help from other people. The only real way to thank those who have helped us is to help the next chap (even if we paid for our help and our lessons, money alone cannot repay those who helped us. The real repayment is by passing knowledge on. Of course it's nicer to do it in lessons and in books, both of which earn a bit of much-needed cash, and anyway we wouldn't have room to print a course of lessons or the amount that you can get into a book. What we can print, and what you can write, every single one of you who reads FoMRHIQ, are those short notes, odd details, bits of experiment that worked (and almost equally important, to save anybody else from wasting their time, those experiments that didn't work), theories that have occurred to you, useful information that you have picked up or spotted in a book that others may not have seen or noticed, and so on and so forth. It is said that each generation stands on the shoulders of the one before; if you don't pass on what you know, there's nothing on your shoulders — just a gap.

David suggested, in the paragraph I've referred to above, that jm should write a really rude paragraph in the next bull.; instead, it's been a bit of personal philosophy. Let's see whether it has any result.

A COMM HEREWIT: Peter Barton has sent in an interesting Comm on the reconstruction of a Roman trumpet. The only snag is that he bound it first with a plastic backing; the result is going to be that you may see, depending on how Beeprint handle it, what look like nibbled edges. Please don't put bindings on what you send.

RILM ABSTRACTS: I've had a letter from Monica Hall saying that she has been shown FoMRHIQ by a member who suggested that it should be abstracted for RILM Abstracts in Music. I replied to her that I didn't think RILM was FoMRHI's scene at all. For one thing, it is very informal,
for another I don't think that people who fly kites or send us preliminary versions of articles would want to be abstracted for RILM, and for a third, because FoMRHI is only available to members, it isn't in the Copyright Libraries (with the exception of the Bodleian Library, which is a member), and therefore is not very accessible to anybody who sees the abstract and wants to read the Comm. Her reply was, after seeing the January Q, which I sent her, that she agreed that it would neither be practicable nor sensible to abstract it on a regular basis, but she asked me to put a note about RILM in the next Q (which you're now reading) to say that if you want your Comm abstracted in RILM, would you write to her for a form at: Music Library, Paddington Library, Porchester Road, London W2 5DU. RILM appears three times a year and aims to include abstracts of all serious writings on music. It can be useful if you're trying to find relevant articles on a subject, but Eric Halfpenny used to say (and my experience is that he was right) that its main function was to allow people to put works in their bibliographies which they had not read.

LOST MEMBER: The April Q sent to Mark Ellis at 66 Gledholt Bank, Huddersfield, has come back marked 'Gone away' - does anyone know where he has gone away to?

FURTHER TO: Comm. 517, Bob Barclay writes:

I was pleased to see your review of Anatomy of an Exhibition in Quarterly 34. There is one point that I would like to enlarge upon, however: the lack of a chapter by Phillip Young. (This point was also made by the AMIS Newsletter reviewer.) What I tried to do in the book was assemble representative chapters on the progress of the exhibition from the point of view of the museum staff. In other words, from January 1979 when the decision to proceed with the Look of Music was essentially a fait accompli in the sense that many instruments had been chosen, budgets had been set and potential lending institutions contacted. (p.12) It was at this point, after the instruments had been chosen and verbal agreement secured, that the museum staff became involved. It is here that the book begins, aside from brief historical introductions. If the lack of a chapter by Professor Young is seen as an omission, this is simply because the whole process of selection, and an accurate and detailed review of the material selected is so well presented in the Exhibition Catalogue. I felt that any re-working of this material would be redundant in view of the fact that the book is clearly a companion piece to the Catalogue. For those who had not seen the Catalogue, there is, I am certain, sufficient mention of Phillip Young's contribution in Chapter 2 for the reader to understand that, without him, the exhibition simply would not have existed. This is categorically stated on page 12.

Thank you for allowing the space for me to clarify this point. The price of the book, incidentally, is $12.50 Canadian (postage paid), $10.50 for members of IIC-CG, and $8.50 for purchases in bulk by dealers.

May I be allowed to add how useful I have found this book even since I wrote the review Bob refers to? Whenever we get a request for the loan of an instrument I refer to it to remind myself of snags.

Comm. 533: A letter received this morning from Robert Cronin says: "I certainly didn't intend for my Comm. 533 to be anonymous. It was sent with a covering letter. My apologies for not putting my name somewhere on the ms...." JM adds: it's for me to apologise for separating the two. Can I ask you now all to get out your Q.35 and write Robert's name in on the title page and on the top of his Comm. If you don't do it now, you'll forget who wrote it by the next time you get it out, just as I did by the time I got the file out to send to Djilda.
Several Comms: I had a long letter from Dave Way commenting on a number of Comms and other points, and it seemed easier to print the whole letter as a Comm of its own, rather than cutting it up. So you'll find that further on in this Q.

BATE PLANS: I said in the last bull that Ken Williams was hoping to get a grant to come here from the Australia Council so that he could produce a corpus of plans which would be useful to makers in Australia. He got his grant and he's here and so far there are five new plans, with more coming all the time. You'll find a list further on, and probably some miniature samples as well, as last time. There is of course also a sheet of bore measurements with each one. I would suggest that, unless you need them urgently, any members in Australia wait till he's back in November, when you'll be able to get them from him and from whomever the Australia Council designate as holders of the masters. All will be available from two sources; from the Bate and from wherever the Australia Council decide (and of course the latter will also have masters of any other plans we get from other drawers; we shall benefit so much from the Australia Council grant that this is only fair as a thank-you).

All Ken's plans are on A3 or A4 paper (or, one, so far, you'll have to do some sellotaping - scotch-taping in America and other-taping elsewhere - as the body of the bass recorder is too long for A3; the same will happen with bassoons). The point of this is that we can then make copies on the photocopier upstairs, which means that we can control the price and also do it whenever it suits me. The one plan on an Al sheet, Tim Cranmore's drawing of the II basset recorder, has to be done at the drawing office over the road, which is a nuisance because I have to take the master over there and then go back to fetch the drawings, and the price is outside of our control, so much so that although only last quarter I announced it at £2, now I have to say that it is £4; they put the price up, so we have to.

Ken is here till the end of October, and he and I choose between us what he'll draw next. If there is anything that you particularly want, please let me know, and we'll consider it. I don't promise (it might be something that nobody else is ever likely to want), but certainly we will consider it.

BATE ACQUISITIONS: Philip Bate has given us a nice echo cornet (Brown & Sons) and lent us a very handsome cornet by Rudall, Rose, Carte with a full set of crooks. Edgar Hunt has given us an English guitar, with no name (the rose is missing, which might have helped) but with a crowned GR and LONDON on the back of the peg-box; has anybody come across an English guitar marked like a pillar box? It looks to me to be earlyish; it has pegs, rather than watch-key machines, and a flat finial to the peg-box with a bone or ivory plaque. I can't believe that King George made it himself, and I'd like to know who did.

GRANT AVAILABLE: The Winston Churchill Memorial Trust, which gave a grant to more than one member last year, has sent me the categories for this year: Music Therapy and Music for Disabled People; Care & Conservation of Artefacts; Village & Home Crafts, and several other categories less relevant to us; if your 'trade, profession or interest falls within these categories', write to: Winston Churchill Memorial Trust, 15 Queen's Gate Terrace, London SW7 5PR, with stamped addressed envelope, between August and mid-October if you want a grant. The grants nowadays cover travel and expenses abroad for about eight weeks only. They emphasise, by the way, that age and qualifications, academic or otherwise, are quite irrelevant; as long as you fit into one of the categories and can convince them that you will "bring back knowledge and experience for the benefit of the community", you stand a chance of getting a grant.
COURSES: A reminder of the Bate Oboe Weekend in November (24th & 25th) with David Reichenberg et al (he hasn’t answered my letter asking who the maker would be; the last suggestion was either Lorraine Wood or Dick Earle, whichever he and they preferred, bearing in mind that running the making sessions as well as playing can be a bit exhausting). Cost will be £15 for the Weekend or £10 for either single day, which includes admission to the concert on the Sunday. As usual there will be playing sessions on Saturday, making (including reeds) Saturday evening and Sunday morning, all in the Bate, and rehearsal and concert Sunday afternoon and evening in Holywell Music Room.

Advance notice of the next Weekend: Clarinet on February 2nd & 3rd with Eric Hoeprich who will be doing both the playing and making sessions. The concert will be given by the Academy of the Begynhof Trio: Roderick Shaw, fortepiano; Eric Hoeprich, clarinet, and Camille van Lunen, soprano, including Danzi Sonata, Weber Theme & variations op.31, Schubert Der Hirt auf dem Felsen and Kreutzer Das Mühlrad. Doubtless you’ll have seen Eric Hoeprich’s articles in GSJ and Early Music on early clarinets.

Longer advance notice of a Woods of Musical Instruments meeting of the Reading Tree Club on Saturday, March 2nd. Draft programme includes: George Jeronimidis (Dept Engineering, Reading Univ) on properties of materials of musical instrument timbers; Timbers and the Timber Trade: Materials of violins (Michael Bird of J.,& W.Beare); Materials of banjos; Modern woodwinds; Early woodwinds (which is why I know about it; the organiser wrote to ask from some suggestions for names); Discussion; Exhibition of timbers; Books. If you’re interested, write to: Miss Catherine Olver, 38 New Road, Reading RG1 5JD.

CONSERVATION: You will find the UKIC "Guidance for Conservation Practice" leaflet elsewhere in this Q (with permission from UKIC). We have a standing arrangement that anything on conservation, because it is a tricky subject which can lead to damage to instruments, should go to Cary Karp for refereeing before appearing in FoMRHIQ. Because this comes from the United Kingdom Institute for Conservation, I have not sent it to Cary, and we should I think regard it as a discussion document. I look forward to your and his comments on it.

QUERY: Marco Tiella was one of the editors of the Quarna exhibition catalogue (see a review in this issue), and among the material stashed away in Quarna, which was the home and working place of the Forni and Rampone families, are drawings and patterns of old brass instruments, some dating back anyway to the middle of the last century and perhaps earlier. Marco asks whether there are any other hoards of such drawings and patterns of brass instruments that anybody knows about? He has had the problem with these that their owner has kept away most of those which look most interesting (the old 'that's my secret' syndrome). If anyone knows of anything available anywhere, please let him know. The only thing that I know is Bahnert / Herzberg / Schramm, Metallblas-Instrumente, published by Fachbuchverlag, Leipzig, 1958, which is fine for the sorts of instruments used in East Germany in 1958, with good clear plans and many measurements, but pretty poor, except for drawings of valve mechanisms, for anything earlier.

He would also like to be in touch with any Associations or Societies concerned with history or technology of musical instruments; the three that he mentions are Viola da Gamba Society, Cornett & Sackbut Soc (jm) and Piano Archives, but there are many others. His students and others ask him where they can get back issues or xeroxes of articles, so any of you who are involved in these and similar societies would be doing him a kindness if you wrote to him (see List of Members) and told him where to write to when he gets such queries.
Coming back to Quarna, Marco says: "All the contemporary makers I met were very suspicious of my intentions. I'm sure they preserve very important evidences about historical wind instrument making. It seems that they are still working in conformity with old (if not 'historical') processes." This aspect of the preservation of old processes is, of course, extremely important to us, and I'm sure it exists in many places. The trouble is that it is normally passed on only within the firm, by apprenticeship and so on, and his first sentence applies also in many places (even among our members; one built many early percussion instruments based on my article in GSJ and my book, but when I asked him how he glued his tambourine heads on so neatly, that was his secret). Every effort to breach this wall of secrecy is worth while, and if you can help Marco do so, please do (and write it up for FoMRHIQ, too!).

OTHER ASSOCIATIONS: I've had a letter from the Amateur Music Association. Since some of you play as amateurs, and most of you make instruments which amateurs, as well as professionals, would buy, if you're interested in them knowing about you, get in touch with Mrs Pauline Johnson, 43 Renshaw Street, Liverpool L1 2SF. I've not written to her yet myself as her letter only came the day before yesterday, but I will do so and will offer her any cooperation that seems useful.

FESTIVALS: Short notice (why don't they circulate these things earlier? Still, if you're interested, it's well worth writing to them to be on their mailing list for next year): The State College of Music in Malmö and the Swedish Early Music Society are arranging an Exhibition of Early Music and Historical Musical Instruments from 29th September to 7th October. Bookings have to be in by 30th May (I) and I received their letter on 26th April (II). Thanks be that the Horticultural Hall Exhibitions are better organised than that. But maybe it's an annual event, and if so, and if you're interested, the address is: Swedish Baroque Festival, Musikhögskolan, Box 13515, S-200 44 Malmö, Sweden. Even shorter notice (remarks in the previous paragraph apply even more strongly here): the Utrecht Early Music Festival, which also has an Exhibition for makers and others; their dates are from 24th August to 2nd September, and they sent out the notice on April 13th. How they can expect me to tell you about it before their deadline of June 15th, I do not know. Once again, if you're interested for future years, write to them: Stichting Pratum Musicum, Jan Luijkenlaantje 1, NL-3705 SL Zeist, Netherlands and ask them to put you on their mailing list.

WARNING: I would advise you not to have any dealings with an American firm, Musica Antiqua Inc, of 2530 California St, San Francisco. They ordered a batch of our Bate Catalogue, which I sent with an invoice. After two and a half months, I sent them a reminder; two months later I sent them another reminder. Now, a month later still I suppose that we have to write it off as a bad debt; they have successfully stolen five Catalogues (which doesn't sound much, but it represents the profit on fifty). So be careful if they try to buy anything off you.

CODETTA: A short bull, but that's all that has come in so far; if anything comes while I'm doing the Members' List Supplement, I'll add it. Meanwhile, I'm here all the rest of the summer, so call in if you're this way.

DEADLINE FOR NEXT Q: 1st October.

FINALE: Nothing new has come, even though this has taken me longer than usual, due to the number of visitors (rough on FoMRHI but good for the Bate). Being single-handed, I can't sit at my desk and type while there are visitors here. I'm reluctant to take this home and finish it at my own desk because I think the bigger type on this machine has been an improvement in legibility (compare this Bull. with no.24, and if you prefer speed to large size, let me know).

Jeremy Montagu
Introduction

The preparation of Guidance for Conservation Practice has not been an isolated event. It is a reflection of a subtle change in attitude of conservators towards their peers and colleagues and also towards the objects entrusted to their care. A more thoughtful approach to conservation is evident. Conservators are not necessarily accepting the present methods but rather questioning techniques and opinions. This is reflected in the fact that 'conservator' and 'restorer' have become synonymous, the differences in approach to common problems merging by a common desire to achieve the preservation of objects for posterity. These guidelines are intended to clarify the responsibilities of conservators, to increase the awareness of individual obligations and to define professional behaviour.

By describing a professional standard, the United Kingdom Institute for Conservation has responded to the demands of its members as well as other organisations concerned with the care of artistic and historic works. The Standing Commission on Museums and Galleries' Report by a Working Party on Conservation 1980 calls for a "register of approved practitioners" implying the need for the accreditation of a professional class of conservators. It is worth mentioning that such a professional class would necessarily cover a broad spectrum of conservators and restorers in all disciplines and in all types of employment.

Conservation standards cannot be variable; in order that conservators may speak and act with weight and authority, it is imperative that a uniform attitude towards the ethical practice of conservation be accepted both by the owners or curators of objects and by conservators themselves.

The conservator's first responsibility is to posterity and then to colleagues, to the public and to the conservation profession.
The Purpose of Conservation

Conservation is the means by which the true nature of an object is preserved. The true nature of an object includes evidence of its origins, its original construction, the materials of which it is composed, and information as to the technology used in its manufacture. Subsequent modifications may be of such a significant nature that they should be preserved.

In order not to change the true nature of the object, certain rules should be observed in its care and maintenance. The following describes the responsibility of the conservator to the object, since it is the conservator who has the power to preserve or distort its true nature.

The Conservator and the Object

General obligations

All professional actions of the conservator are governed by total respect for the physical, historic, and aesthetic integrity of the object. Concern for its future should include protection against damage and loss.

One standard

With every object he or she undertakes to conserve, regardless of any opinion of its value or quality, the conservator should adhere to the highest and most exacting standard of treatment. Although circumstances may limit the extent of treatment, the quality should never be lowered. While special techniques may be required during the treatment of large groups of objects, these procedures should be consistent with respect for the integrity of the individual objects.

Suitability of treatment: reversibility

The conservator should not perform or recommend any treatment which is not appropriate to the preservation of the object.

The conservator should endeavour only to use techniques and materials which, to the best of current knowledge, will not endanger the true nature of the object, and which will not impede future treatment, or the retrieval of information through scientific examination.

The techniques and materials which affect the objects least and which can most easily and completely be reversed should always be selected. An improvement in conditions of display, storage or use may often be preferable to physical intervention.

Nothing should be removed from an object without sufficient evidence that it is not part of the original condition of the object.
Examination and records

Before carrying out any treatment, the conservator should first make an adequate examination of the object and all available documentation in order to record its condition and history, and to establish the causes of its deterioration. A record of methods and materials used should be kept as a permanent, accessible archive.

Restoration

It is unethical to modify or conceal the true nature of an object through restoration. The presence and extent of restoration must be detectable, though it need not be conspicuous. All restoration must be fully documented.

Professional competence and knowledge

Conservation and investigation should be undertaken only within the limits of the conservator's professional competence and facilities. Moreover, it is the responsibility of the conservator to keep up with current knowledge and to continue to develop skills so as to give the best treatment available.

There should be no secrecy about any technique or materials used in conservation. The development of a new method of treatment or a new material, and the composition and properties of all materials and techniques employed, should be fully disclosed as far as they are known. The originator is expected to co-operate with other conservators and conservation scientists employing or evaluating the proposed methods of materials.

Professional relationships

It is the responsibility of the conservator, as the person with the necessary technical knowledge, to uphold the best interests of the object, and to give an honest opinion as to the best course of treatment.

Before starting to treat an object, a conservator should consider the advice of colleagues and those responsible for the object.
It is the duty of the conservator at all appropriate times to volunteer advice to the owner on the subsequent care of a conserved object with regard to its handling and conditions of storage and display.

Training and instruction in conservation should only be given within the limits of the conservator's knowledge and competence, and the facilities available. The supervising conservator should set aside adequate time for the instruction of trainees.

If the conservator delegates work on objects, he or she is directly responsible for the work. This includes work delegated to trainees, volunteers, subordinates or outside agencies. Work should not be delegated or subcontracted unless the conservator can directly supervise it, or has sufficient knowledge of the agent.

FoMRHI BOOK NEWS

Langwill Index of Wind Instrument Makers: The new edition (see Comm.421) is still a couple of years or more in the future, and you may like to know that a few copies (two or three dozen) turned up in the printer's warehouse of the 6th edition. Tony Bingham bought the lot and has them for sale at the original price of £13.50 plus £2.00 postage. Don't wait too long before ordering - they're going fast.

Tony also has a new book catalogue out, about 180 titles all available from stock. If you want a copy, write to him (in the List of Members). Remember that both he and Brian Jordan have said that they will not charge postage to members (this doesn't apply to Langwill above), which is a considerable concession nowadays (and obviously doesn't apply to airmail).

Cary Karp has sent me a handful of things. Two are offprints, available through the periodicals concerned (ie they will be in appropriate libraries) and three are supplements to them, with more mathematical etc data, which are available from Cary at the Stockholm Musikhistoriska Museet (ie their address with Cary's name as the first line on the envelope):


Supplement to A Matrix Technique, etc, available from Cary.
The Inharmonicity of Strung Keyboard Instruments. This is a pre-publication draft text which may or may not be available for comment and discussion. If you're really interested, write to Cary and ask whether it is. He'll let us know when and where it finally appears.

Autographus Musicus have sent me their latest catalogue. This is of Swedish music, or music in Swedish libraries (eg Buxtehude et al). Most is Roman (sonatas, Drottningholms-music, etc), Kraus, Agrell, Zellbell, Johnsen, etc. Prices are reasonable (US $6 to 33, according to length of work) for autograph facsimiles and facsimiles of early prints. Their address is Årdalavägen 158, S-124 32 Bandhagen, Sweden, and the prices include airmail postage. I've only just noticed that they're also in £; the range is from £2.75 to £15.

GROVE are producing a spin-off book, The New Grove Dictionary of Musical Instruments in three volumes. While it is basically spin-off from the main Grove, a fair amount has been rewritten (I've redone some articles for them and I know a good many other people have done so as well). From my own experience, I'd say that they have got on to all reviewers and said 'just what did you mean when you said that you didn't agree with....', and have then done something about it. It includes all the articles on European, non-European, folk and all other instruments, about 800 on Western instruments (I'm quoting; I call them European, with all due apologies to those outside Europe who share the same culture and use the same instruments; they call them Western, presumably with the same apologies to the Chinese, Japanese, Australian and all others who are only Western if you go round far enough; what on earth should we call them? Ours? And if so, which are Theirs, or even Yours?), 6,000 on non-Western and Folk, with over a thousand illustrations in all, 200 on aspects of performing practice, nearly 1,000 on makers and inventors, and so on. It sounds well worth worth having, so much so that I've said that we'll put a leaflet about it in the next Q (I've not told Margaret yet!). There is, of course, a snag: it will cost £250, though if you order off the leaflet (this is why I'm telling you now - to give you time to arrange the bank-loan) before December 31st, it'll only cost you £225. And don't count on being able to buy a set for £10 in a pirate Hong Kong edition; they've managed to close a lot of the gaps that cost them so many sales of the main Grove.

There will be a review, I hope, but whether we'll get review copies before the 'cheap' offer expires, I don't know. Perhaps it'd be best to go to a library and skim through Grove to see what the instrument articles are like.

FoMRHI Record News

Pat McNulty tells me that he has produced a new record of Union or Uillean pipes, including the Egan (flat) pipes in C in the National Museum of Antiquities in Edinburgh. Obtainable from him (in List of Members) at £5.30 including p&p. I suggested that he send a copy for review, but he hasn't; he says that he organised, arranged and financed the venture himself and had tight control over the finished product, which he's quite pleased with, and you can probably take his word for it. Perhaps I should have said that the Egan pipes are on three tracks out of twelve, and that most of the music is Irish (dance and slow airs) but with one Northumbrian pipe tune.
RECORDERS:

Anon. Bass, style of Bressan, maple with ivory mounts, ex Edgar Hunt Collection. The crook and strut (shown reduced size) are replacements by Robert Bigio.
Measured & drawn by Ken Williams, 4 sheets

Renaissance basset marked !! !! (see first list)
The A1 sheet is printed by a local drawing office and they have increased their prices, so it costs now £4.00

TRAVERSOS:

Schuchart, boxwood with ivory mounts, 1 key; Anthony Baines Loan
Measured & drawn by Ken Williams, 2 sheets

OBOES:

Stanesby jr, maple with silver mounts, 2 keys
Measured & drawn by Ken Williams, 2 sheets

Thomas Cahusac sen, boxwood with ivory mounts, bulb top, two keys, ex James MacGillivray Collection
Measured & drawn by Ken Williams, 2 sheets

Milhouse, Newark, boxwood, straight top, 2 keys, ex Hunt Collection
Measured & drawn by Ken Williams, 2 sheets

Anon. oboe Mute, ? late 18th century, Anthony Baines Loan
Measured & drawn by Ken Williams, 1 sheet

These prices include postage (inland and surface abroad) for despatch flat, folded to A4 size; if you require rolled, please send your own tube and add sufficient postage to cover its weight.

Cheques should be made payable to The Bate Collection, Oxford, and must be in pounds sterling. Eurocheques cannot be accepted by the University, nor can cheques in other currencies, due to the excessive costs of clearing and converting them.

Photographs of the instruments complete and disjointed are now available at £3.00 each; photographs of special details can be taken, but an extra charge may be made.

Both drawings and photographs are Bate Collection Copyright.

Orders should be addressed to: Jeremy Montagu, Curator Bate Collection of Historical Instruments at the above address.
FOOT

KEY (SILVER)

KEYSPRING .291, .496 BRASS
ACTIVE LENGTH .36 IN TAPERED FROM .056 TO .042 WIDTH
BASE EXTENDS 3.5 IN TO LOCATE IN SLOTS CUT ON SIDES OF KEYWELL.

TOUCH (SILVER)

NOT ORIGINAL - REPLACEMENT BY MAURICE VINCINT

CAP

FOE BORE 100 650 SLOTS IN 3500 DEGREES 7000 D1 1000 000
FOR HEAD A VISIBLE DETAIL SEE DRAWING B1 0000 0000 0000 0000 0000
DIMENSIONS - MILLIMETERS

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UNIVERSITY OF OXFORD
BATE COLLECTION OF HISTORICAL INSTRUMENTS OF OXFORD
Faculty of Music St Aldates Oxford OX1 10B

AVON BASS RECORDER [Edgar Hunt Accession]
Bresnahan-Style - First quarter B.C.
CAP "FOOT & KEY"

Measured & drawn, Alan Williams 1987-88. (With great assistance from The Music Board of The Australian Council.)
Material: Varnished wood

Dimensions in mm.

Max. Range of Diameters is 24-32-251.

Measured & drawn: Ken Williams 13-7-84 (With grant assistance from The Music Board of The Australia Council)
Italian two-manual harpsichords: some notes following Comm.537

In Comm. 537 Richard Shann mentioned my comments on Italian two-manual harpsichords (which were mostly made in a conversation we had at the Bruges exhibition in 1983), but did not report me correctly as I certainly do know of some such genuine instruments. It may be of more general interest to relate what is known of these instruments.

I know of three genuine two-manual Italian harpsichords. One is signed "Domenico da Pesaro Facebit Anno Domini 1590" and Boalch (1) gives its whereabouts as "Lucerne, in the former Schumacher Collection". Anyone going to Lucerne expecting to see this instrument will be disappointed (as I was!) since it is now in the Germanisches Nationalmuseum, catalogue number MIR 1078. It is illustrated in Van der Meer (2), a drawing is available from the museum, and the instrument can be heard on Reflexe C 063-30 120 where Colin Tilney plays music by William Byrd. Van der Meer refers to his having established the authenticity of this two-manual arrangement (3). The museum drawing gives a disposition thus:

\[
\begin{align*}
8' & \quad \text{lower keyboard} \\
8' & \quad \text{no coupler or dogleg jacks} \\
4' & \quad \text{ keyboards}
\end{align*}
\]

The compass is C/E-c' and a date of "um 1650" (about 1650) is given by the museum, although there are reasons for thinking that the harpsichord might have been made a good 50 years earlier, to which I will return later. As Van der Meer did not believe the work to be by Domenico of Pesaro (i.e. Dominicus Pisaurensis, sometimes written Pesaurensis; this should not be confused with an origin in Pisa which would be "Pisanus") he did not refer to the Dominicus inscription in his article (4). My comparison of the mouldings of this instrument with other, genuine Dominicus instruments excludes entirely the possibility that he was its maker. The actual maker is at present unknown, but further moulding comparisons may yield more evidence.

A second harpsichord with two keyboards is that attributed to Batolomeo Cristofori, 1690, and kept in the Musee Instrumental, CNSM, Paris. I am not yet sure if the attribution is correct, but it is quite possible. There are strings for 2x8' and 1x4'; the two keyboards are, as with the "Domenico", independent of each other. As there are four rows of jacks, it seems that the arrangement was intended simply to give 1x8',1x4' on both keyboards.

In the Museo Civico, Treviso is a two-manual harpsichord which has suffered some alterations. The present keyboards have ebony keycoves and judging by the workmanship might even have been made in France. I have wondered whether the instrument might have been made in the south of France since the style of workmanship is not typically Italian; the use of cypress around the inside of the case (a false inner-outer instrument) is not by itself proof of Italian workmanship. The Martinus Kaiser clavicysytherium in the Kunsthistorisches Museum, Vienna also uses cypress and it is quite clearly an instrument built in a German decorative style. Whatever the doubts as to the origins of this instrument it was clearly intended to have two keyboards from the beginning. There are three registers, i.e. 2x8',1x4', but I have been unable to establish where the 4' was placed. The original compass was G,,A,-d',e' although it is now F,,-f'. The instrument is illustrated in Mariacher (5) and could be dated to about 1700 on the basis
of the keyboard range and style of construction.

Here we leave the secure ground of original work and enter the mire of alteration and falsification. Van der Meer gives details of a two-manual harpsichord in the Historisches Museum, Basel, which is described as "Ioannes Andrea Meneggoni" (6). This is, however, a confusion with the "Ioannes Antonio Baffo Venetus P MDLXXXI" in the same collection. Russell mentions this "Baffo" harpsichord and suspected the 4' to be a later addition. The 4' register is in fact original as can be shown from the method used to fix the bridge to the soundboard: wire pins were driven into the bridge before gluing and corresponding holes made in the soundboard so that the bridge would sit in its correct position. Glue was applied to the bridge, the bridge pins introduced into their holes and hammered flat from the underside. Such a fixing method is only possible when the soundboard is out of the instrument, and the soundboard has never been removed from the case. In point of fact almost all repairs or modifications to Italian harpsichords have been made with the access gained by cutting holes in the baseboard, even where whole bridges have been replaced. Thus the original disposition was 2x8',1x4'. The second keyboard is a later addition, and the evidence is strong that it was Franciolini who carried out this modification: he offered a "Baffo" of 1581 for sale in one of his catalogues (8). A number of features of the modification are 19th century in origin and I must therefore disagree with Van der Meer who maintains that the modification was carried out shortly after the instrument was built. On the basis of a comparison of moulding profiles I have carried out, the harpsichord is the work of Giusti, as I have argued elsewhere (9).

There are some other instruments which now have two or more keyboards and opinions have already been expressed of some of them that they are fakes or altered instruments. I can think of the following: Boalch No 11 attributed to Dominicus Pisaurensis, Boalch No 2 and No 6 attributed to Cristofori, Boalch No 2 attributed to Nicolaus de Quoco, Todini 1675. There may be a few other instruments lurking in my files which should be mentioned, and should any readers know of others I would be very pleased to hear from them. The likelihood that any of these is original is small, but is a possibility not to be dismissed.

An inventory of Cardinal Ottoboni's instruments (10) mentions what might be a two-manual harpsichord: "Two harpsichords together that is, one above the other, the one above with three registers; the one below with one register, Made by Gio. Batta Cortonese" (i.e., Giovanni Battista Boni of Cortona)(my translation). That three registers are on the upper manual seems curious; if anything one would expect to find fewer registers on an upper keyboard. One can never be entirely sure from short inventories where no cross checks are possible how accurately the scribe had observed the instrument.

This is all precious little stuff from which one can say anything about the placement of a 4' register in Italian two-manual harpsichords. Since there are so few of them surviving we are hardly entitled to consider them a normal manifestation of the daily musical life. Nevertheless, the MIR 1078 could well have had the 4' on the upper manual, and with the "Cristofori", the 4' was certainly playable from either keyboard.

In a letter to Richard on his Galpin paper I forgot to comment on his footnote 35 where he writes: "Thus the combination of 1x8', + 1x4' could not be obtained (on the 1638 Ruckers which was altered in Italy according to his article) but in view of
the evident dislike of the Italians for this combination this is no surprise." If one relies on Russell and Hubbard for information on the use of the 1x8',1x4' disposition in Italy, then one will indeed gain the impression that a 4' stop was unusual in Italian instruments. Barnes drew attention to the fact that a number of instruments that are now 2x8' were in fact built from 1x8',1x4' dispositions (11). Henkel has stated that the 2x8' disposition did not become well known until the 17th century (12). I have investigated several other Italian harpsichords which were not mentioned by Barnes or Henkel where a 1x8',1x4'disposition can be positively established. Thomas has expressed doubts about the originality of 4' stops in early Italian harpsichords (13), but I can dispel these doubts quite easily from several examples. Perhaps the best example one can cite of an original 1x8',1x4' disposition is that of the 1554 Dominicus Pisauri (Pisauriensis) harpsichord (14). Although the disposition has been altered to 2x8' (15), the marks of the original 4' are perfectly clear. One can dismiss the hypothesis that the instrument was originally 2x8', then had a 4' added which was later removed since the original construction lines for the layout of the harpsichord are on the baseboards and these show an 8' and 4' nut.

I have drawn attention to the fact that most surviving Italian 16th century harpsichords were 1x8',1x4' (16) and this point can hardly have enough emphasis in view of the widely spread influence of the works of Russell and Hubbard. There are more recent sinners who have not been reading their Henkel but have been content to rely on the outdated work of Russell and Hubbard; as a result they have helped to perpetuate the inaccuracies (17).

We have therefore to recognise that the 4' stop in Italy was extremely well known in 16th-century harpsichords. It seems plausible to suppose that with the rise of the basso continuo around 1600 that harpsichords with 2x8' were preferred as instruments that could make their presence felt. New harpsichords were thus built as 2x8' and existing ones modified to 2x8'. These modifications were perhaps undertaken sometime around 1650 and afterwards. The last dated harpsichord I know of built as 1x8',1x4' is the 1628 Albana but the last flurry of harpsichords built in this way seems to have been around the end of the 16th century in Venice. The problem is that one does not know how representative the sample is, and many instruments cannot be accurately dated. For this reason I think we will never have more than an approximate idea of when, and how quickly, this change took place. It would suggest to me though that MIR 1078 belongs to the period around 1600 and not around 1650.

Referring to the question of whether "split sharp instruments (were) already invented when the 'transposing' doubles were devised", to which Richard addresses himself, we can give some fairly precise replies. The principle of extending a meantone tuning by the addition of extra notes playable from "split sharps" was known in Italy since at least the 1470s when Lorenzo da Prato started work on his organ for San Petronio, Bologna. The principle was persuas to one logical conclusion by Zarlino who had a harpsichord built for him by Domenico Pesarese (i.e. Dominicus Pisaurensis) in 1548 with 19-notes to the octave. Surviving Italian harpsichords and virginals (or spinets it you will) have usually only a d' and a and are known from about 1600. How frequently they were built in the 16th century is impossible to say, but the "invention" had already taken place in the 15th century; it was only a question of
whether the maker and player of such instruments judged the effort worthwhile.

Footnotes

4. Van der Meer 1974 op. cit. p.140
6. Van der Meer 1983 op. cit. p.168
8. As reported by Russell op. cit. p.145
12. H. Henkel "Beiträge zum historischen Cembalobau" Leipzig 1979 p.128
13. M. Thomas in an article for the English Harpsichord Magazine. I am unable to give the exact reference at the moment but I believe this was October 1981.
14. The harpsichord is in the Musée Instrumental, CNSM Paris, but the date is not 1553 as given by several sources including Boalch; it is 1554.
15. Probably by Cristofori as I have suggested in an entry on Italian harpsichords in the New Grove Musical Instrument Dictionary under "Harpsichord" (in press)
16. In the New Grove entry op. cit fn. 15 and in a letter to "Early Music" 12 No 1 (Feb. 1984) p.151
17. These are: F. Hammond "Girolamo Frescobaldi" Harvard 1983
    S. Leschiutta "Cembalo, Spinetta e Virginale" Bérben 1983
    Van der Meer 1983 op. cit.

FOMRHI Comm. 539 Comments

D. Jacques Way

Receiving FOMRHI this morning reminds me that I have stacked away in the back of my mind a number of comments I fully intended to make as a result of reading past issues. Eph Segerman's comment: "There are many leading makers and even some instrument researchers who are not members, and I've been trying to find out why." Without elevating myself to the status of leading maker, although I swear I know number, the problem is probably the same as mine—writing communications for FOMRHI means playing hookey from a desk piled high with twenty or thirty letters that ought to be written, and the management problems of running a business, overseeing a number of employees. The more 'leading' the maker, the harder it is to break out, lean back, and write thoughtfully. Furthermore, the 'leading' makers I know are involved in associations, organizations, which take a large toll. And while one might be able to give answers to a number of questions asked in FOMRHI, justification, scholarly and scientific, requires digging back through half-forgotten references and reviewing the supplementary details of formulas, writing footnotes—being 'scholarly'.
Now that I am at the typewriter, allow me to make some 'irresponsible' comments, i.e., comments without justification of mathematical formulae or scholarly footnotes, and so with them what you will.

Item: It has been adumbrated several times in FOMHRI that the reason some people do not communicate is that they do not wish to reveal 'secrets'. I doubt this. I have found the really good makers I know to be extremely open and helpful—but this was not always my impression. There was a time when I didn't know enough about things to ask questions that could be answered, when I was asking questions that implied a fact that was completely untrue.

Some years ago I gave a seminar on harpsichord making at the York Early Music Festival. A London doctor and his wife had followed me all week long asking me how high was up, and I had struggled to answer them courteously. At the final session the good doctor arose and said, "Mr Way, you have built a number of instruments, but you refuse to tell us how you do it. Now there is a blackboard behind you there. Will you please write down upon it the mathematical formulae for building a harpsichord. I am sure you can do it." When I confessed my great shame at not being able to comply with his request, he and his wife stalked out, climbed into their Ferrari, and roared back to London. The only word I could distinguish in his comments as he made his dramatic exit was 'charlatan'.

Comment: There is no excuse for a person working today to make 'authentic' instruments, i.e., instruments that copy dimensions or techniques of past centuries, unless by doing so he can make a better instrument. The motive power behind the "Trends towards Historical Accuracy..." that Eph speaks of in Comm 523 has been the discovery that the Old Ones knew what they were doing, and that all modern inventions applied to these instruments made the instruments worse instead of better. The harpsichord, for example, is now a modern instrument, much in demand by modern players. I doubt if anyone makes more 'authentic' harpsichords than I do (I have not seen such), but this state of affairs has come about simply because I am trying to make the most satisfactory and reliable and musically valid instruments possible. Curiously, at this moment the kits are even more 'authentic' than the custom instruments we make, simply because the authentic techniques are more suited to the resources of an amateur's workshop.

Comment: I love Eph Segerman's renaissance drive to be literate in all aspects of instrument making. Sometimes, though he gets things upside down and hind end foremost. One of his think pieces some time ago implied that tensile strength was the most important consideration in judging the quality of music wire. The truth is that tensile strength of ferrous wire is never the problem, since this is so easy to achieve (even with ancient technology). Must more important are the purity and homogeneity of the rod, the evenness of drawing (no hot spots or thin sections), the roundness of the wire (which allows the partials to develop accurately), smoothness of the draw so there are no deformities of the surface, etc., etc.

Modern, high-tensile piano wire is far stronger than it needs to be to hold the tension of the modern piano (which has almost the exact scaling in the treble of a sixteenth-century Flemish harpsichord--some of the antique instruments used a scaling longer than a modern Steinway). There was a wild time around the turn of the last century when piano manufacturers were experimenting with impossible long scalings, which led to a demand for stronger and stronger wire. So the modern wire was made, and has become the standard in the piano industry, and the tonal structure of the modern piano has been built around this wire, which serves very well.
I had the Zuckermann 'soft' wire made for tonal reasons, because I could hear the difference on my instruments, and I liked what I heard. I continue to be inauthentic by tinning the wire—parts of the U.S. and Canada are in the 'acid rain' region, and the air we breathe will rot unprotected wire very quickly (what it does to our lungs is another matter). Also I deal with amateurs, and a certain number of the general population has enough uric acid in their hand sweat to eat wire; this seems to do them no harm, but it is hard on instruments.

Comment: Eph has it upside down about soundboard thicknesses. Early on in the harpsichord revival, almost everyone used the thick soundboard derived from pianos—thickening the soundboard was one of the things that piano makers learned as they developed the modern instrument, so it was natural that this 'knowledge' should be applied to the harpsichord. In the second phase of the revival, say about 20 years ago, the thick piano-style soundboard was abandoned for a thickness of about 1/8 inch, following a rough average of the antique instruments, and the barring was simplified. Some makers experimented with very thin soundboards, some tried to emulate the variable thinings across the board they observed in the old instruments, and some of the leaders in the movement for authenticity declared that these variations in thickness discovered in the old instruments were the result of hand techniques; or followed Hubbard in believing that the old builders were 'misled by analogy' in making their boards thicker in the bass and thinner in the treble.

The current view among successful harpsichord makers attempts to approach the problem with something like the sophistication of the old builders, who recognized that the thickness of the soundboard must participate in an exquisite balance between the energy source (the pluck) and the mass of the soundboard (which is driven by the string's vibration).

Successful modern makers also recognize the necessity to control the richness of the partials in different parts of the harpsichord's compass, simplifying the partial structure of the treble, and making the response as rich in partials as possible in the bass (in other words, following what organ builders and violin makers have been doing for centuries in outwitting the imperfections of the human ear in perceiving pitches).

No artificial transfer of dimensions from antique instruments to modern ones will accomplish the purpose of the antique builders—'authenticity' must be approached by dealing with the actual materials to hand, rather than by copying dimensions.

The only approach to 'historical accuracy' in the building of instruments is to follow the antique method of building the instrument with your ears instead of by copying. The most precise dimensional copying will only get you into the ballpark, so to speak.

Comment: Thirty feet away from a harpsichord it is all but impossible to distinguish the difference in sound between bird quill and delrin. Bird quill is three times stiffer than delrin, and so makes a great difference in the 'feel' of the instrument, and some players value this very much. Bird quill was completely unsatisfactory some years ago because of the DDT pollution. We are getting much better quill now that DDT has been banned, but it is a question in my mind whether the kind of quill available in the eighteenth century will ever again be available.
This subject has come up in a number of Comms, ranging from intelligent discussions of undoubtedly authentic methods (Malcolm Rose Comm 290) through cavalier dismissals of the same (David Way Comm 303) to ingenious speculations (R. R. Lee Comm 509). Here I shall review some of the historical evidence, and give the nuts and bolts of the method adopted by the Ruckers (bending over a hot iron). This seems to have been the best method for mass production, but nowadays with the advent of electrical heating the method works well for the smaller maker.

Soaking the board and clamping it cold to the form as described by Malcolm Rose is documented in the 18th century technical treatises. It requires no special technology not otherwise present in the workshop, and for low levels of output (associated with elaborate instruments for the aristocracy) it seems to have been quite practical.

The method recommended by Way, steaming the board and clamping to a form is only slightly higher tech. He gives no evidence to suggest that it may be authentic, but merely assures his readers that 'steaming not soaking is the way to go'. If it is really true that a steam-bent plank will 'lose much of its curve after only a few months in the package' then I would fear for the permanence of harpsichords made that Way.

If one approaches harpsichord making from the wider field of Lutherie, then bending on a hot iron suggests itself quite naturally, as it is the usual approach to the bending of the ribs and belly staves of, for example, the 17th century English viols. This is the method that I adopted at the outset when I started to make copies of Ruckers harpsichords, lacking any other evidence; however Grant O'Brien pointed out to me that in the course of restoring the harpsichord-virginal combination instrument in East Berlin, the hidden bentside was discovered to be heavily and uniformly carbonised on its concave face. (See Martin-Christian Schmidt, in Neue Museumskunde, VEB Deutsche Verlag der Wissenschaften Berlin, Jahrgang 21-1/1978).

In addition, the Dernhausen double, which has been stripped to the bare wood and recently varnished, has burn marks still visible (I have photos of this if anyone is interested). One can see the effects of the burning technique on the methods adopted to finish the outside of the instrument. For example the Traquair House Ruckers has a heavy underpainting on the bentside while the other sides have only a thin layer of paint over the surface as left by the plane. (Incidentally, it was possible to demonstrate that the lid was not planed with the same plane as the sides of the case; the pattern of nicks in the two blades were quite distinct). Another approach seems to have been to plane off the worst bits of burn at the sharpest part of the bentside; the 1638 Edinburgh double is thinner here. The most likely method used would be a batch system. A large piece of cast iron with a three foot radius on it would be heated in a fire, withdrawn and then as many planks bent on it as possible before it got too cool. My experience suggests that the last ones would then be very little charred, which accounts for the variation in finishing that one sees. The smaller makers may not have had such a grand big iron - the anonymous '5 voet' single in Stockholm looks like it was done bit by bit on a small iron.

Nowadays it's simpler to use electric heating. The sketch shows my iron, which I hope will be mostly self-explanatory. A piece of mild steel at least 1/4" thick is bent to a 2 - 3 ft radius (this is too shallow for making the 3-voet size of harpsichord as I found to my cost, but these are not so popular nowadays, and we have no evidence that the Ruckers made them anyway; certainly the larger the radius of your iron the easier it gets up to a point.)
Onto the sides of this is clapped some 3mm mild steel sheet, and heating bars (the type sold for electric fires) are suspended across. I used 12 nominally 1kw fire bars wired to give 3 kw in all. Insulators for this are difficult to get, I made my own out of fireclay. A piece of angle iron is then welded in place to leave an 18mm (say) gap between one of its faces and the upper face of the iron. In use, the end of the (previously moulded) plank is inserted into this gap and by pulling the plank down onto the iron the curve is formed. At rather low temperatures (just a little scorching) this can take 20 mins, but I suspect that the Ruckers averaged perhaps 5 - 10 mins per bentside.

The moisture content of the bentside seems to have a marked influence on any tendency to straighten out in the day or so after bending. For example, a bentside bent with a 12% moisture content straightened out by 2mm (this was for the curve of the Edinburgh instrument mentioned above); once dry the curve seems to be stable (I have experimented with leaving bentsides around for a few months, but was unable to detect any straightening). Bentsides is definitely one of the areas where the 'authentic' can pay off; cheap quick and stable it makes the wood–plastic glue-laminated creations espoused by the kit manufacturers look decidedly silly.
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Vernon Wood, 26 Moray Avenue, Hayes, Middx UB3 2AU, UK; t: 01-561 6707 (fl, P; flute, oboe, keybd; M).
Phillip T. Young, 958 Royal Oak Drive, Victoria, BC, Canada V8X 3T4 (ww; L, W).
Roger D. Ziegler, 650 Lakeshore Drive, Klamath Falls, OR 97601, USA; t: (503) 882-2694 (fl, rcrrdr, bagpp, harp; M, P).

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"X" indicates a placeholder for unknown information.
I accept that I was completely at fault for not acknowledging Angelo Zaniol’s reply in my Comm.514, PoMRHI January 1984, and for not replying to him.

Although he didn’t answer the questionnaire, he did write me a long letter in reply, which, as he says, he must have spent a long time over, and he did ask for a reply in return.

Also, various of the points he made could have been included in my Comm., and I should have at least acknowledged his response. I am ashamed of myself for being so inconsiderate, impolite and arrogant, and believe Angelo Zaniol was completely justified in criticising me for that.

Also, and maybe more importantly, I am very sorry because, as he says, he will not so readily reply in future to an inexperienced person writing to him, and that is a great pity, because I do not wish to discourage friendliness and helpfulness between people. I will attempt to be more considerate and thoughtful with what I do in future, and not to be so impolite, ungrateful and arrogant.

However, unlike Angelo Zaniol, many makers did consider my questionnaire worth attempting to answer, including Stephan Blezinger (for Mollenhuer), Thomas Prescott and Rob Turner, Fredrich von Huene (his answers came too late for inclusion in the PoMRHI summary), Bob Marvin, Alec Loretto and Dr. Hermann Moeck.

Maybe my questions were not always the important ones, but I am not an experienced maker and do not know the important questions. Also, I never set out to find the secrets of perfect recorder voicing (although that would have been nice!). The work was a 'Research Methodology' project for my college course.

I am aware that the Comm.514 was not very useful, but I hoped it would be of some use and interest. I wanted to give something back for the help I had received. I could not say what maker had said what, because I did not have their permission to quote them.

Although I have now finished my course at the London College of Furniture and the project, it remains incomplete and inconclusive (Angelo Zaniol would probably agree that that was predictable!) partly because I attempted to research much too much. But I will continue to try and find out more about recorders, and will attempt to share what I discover.
I was asked by the Roman Military Research Society if I would make for them a Cornu. This had to be a real instrument which would produce an effective sound.

My initial researches revealed considerable confusion, especially over nomenclature, as to what was a Cornu. I finally surmised that Cornu (horn) was indeed a generic term and covered a great variety of horns, made of animal horn, sheet iron, brass, and bronze cast and of sheet; also of varying lengths from less than 100 cm up to nearly 4 m.

Reference was made in Roman times to the sound of the Tuba (tube) as "horribilis sonitus", "terribilis sonitus", "fracti sonitus", "raucitas", "rudor", "clangor", and "gravis".

Amongst the family of Cornua, authorities distinguish—between the following species:

1. Lituus and Carnyx: Beginning straight but curving in the bell section. 35 cm to 80 cm, probably used by cavalry. The carnyx usually decorated with animal head bells. Conical bore.

2. Tuba vero directa: Straight, short, of bronze or iron, and somewhat longer than but akin to the short English hunting horn (for fox hunting), and varying in length from 105 cm to 180 cm. Also conical bore.

3. Cornu/Bucina/Tuba Curva: A group of considerable confusion! All curved, some helical, some almost full circle, with a wooden cross-piece, ranging in length from 140 cm to nearly 4 m.

My customer supplied me with a photostat of a page of BM Catalogue (1) which had an illustration of Item 303, with accompanying text as follows:

Bronze Horn (cornu)
Height 1.28 m width 1.10 m;
Diameter 1.20 m
Naples Museum, old inv 1277
From Pompeii.

"The tube is approximately 3.3 m long, bent almost into a circle and held by a transverse strut (probably covered in ivory), which rested on the player's shoulder so that the bell of the horn appeared above his head."

Here, at least, was a photograph of the genuine article, or at least one of them.

I was also supplied with a photostat of an article: Behn, Friedr: "Die Musik im römischen Heere," extracted from I know not what learned journal. From this, with my very limited German (full translation would be invaluable) I extracted some very important information:

This same instrument (from Pompeii) was copied, first by Mahillon of Brussels (2) then by Alexander of Mainz (Behn p. 41 (3)), and another by Mahillon, in Florence (4). This last is catalogued as:—"111 (N164) Tuba Curva, 19 copy by Mahillon, Tuba Romana from Pompeii, length 343 cm. (Conservatorio di Musica Luigi Cherubini, Firenze, Palazzo Vecchio)."

(Also in the Brussels Museum, No. 466, a "cornu", length 140 cm, which, from its length, should be a Bucina?).

* Ringed numbers refer to Illustrations, pp 7 & 8.
Branch D - Instr. a Embouchure.

Italie 464  
_Tuba curva_, bucina. Mahillon in G.  
Length 340mm including mouth piece.  
(Copy of original found at Pompeii)

465  
Another the same.

466  
Cornu. 140cm, including mouth piece (Bucina?)

At this point I contacted my customer and we discussed the findings so far, to decide what instrument should be constructed.

A large instrument was needed and it seemed that the Pompeian example would be the most appropriate. Many of the oft quoted Latin references to the sound of the _Tuba_ would suggest a longer rather than a shorter instrument, especially "gravis" which would hardly be appropriate to the short _Tuba vero directa_ or to the _Lituus_ or _Carnyx_.

Another important consideration was that the Pompeian original, which was playable - if I have translated the relevant part of Behn's article - was in G (10ft) and readily produced the fundamental and all the harmonics up to the 16th with ease.

It was therefore decided that an approximate reconstruction of the Pompeian instrument should be attempted, in brass, with a basic and unadorned structure dictated by the limits of funds available.

So, from a consideration of the 'facts' available, of the photos of the modern 'reconstructions' by Mahillon and Alexander, and the BM catalogue photo of the Pompeian original, I concluded that I could produce a modern reconstruction of the Pompeian original, in brass, which would be far closer to an original than anything else on show at present.

From the photo of the Pompeian original, I estimated that the lengths of the three sections were roughly in the proportion of 1:3:1, i.e. Bell section to top T socket of handle 726cm; length between T handle sockets 1886cm; 'mouth-pipe' to beginning of receiver 697cm. This made for a shorter mouth-pipe section than that of the Alexander reconstruction but produced a finished article more in keeping with photos of existing originals. The Alexander "reconstruction" appears to attempt to maintain the curve of the back-bow into an almost full circle.

I was also supplied with dimensions of the Mahillon "reconstruction" in the Brussels Museum:-

Bell-end internal diameter 110mm; tubing OD at top T 22mm; at bottom T 16mm. These, being easy to copy, I took as those of the Pompeian original, so used them.

Receiver and mouth piece measurements I took from plastic casts supplied by the customer, taken from an exhibit in the Colchester Museum.

The "Bell" Section

A comparison of the photo of the Pompeian original with those of Mahillon's and Alexander's, is enough to indicate that these made no attempt to match the original's bell profile and rim. Alexander's looks
like, narrow bore trombone bell, while Kahillon's, which does have a reinforced rim of sorts, is still as straight as a flower vase.

Examining the photo of the "original" - and I wish I could have examined the original itself - I was struck by its similarity at the bell-end, to that of a Nigerian Kakaki which I had once restored. This had a wide flat rim at right angles to the bell-end, with as much width again inside the bell, hammered 90° to the rim. [See Anthony Beinus, Brass Instruments, Their History & Development Plate III, 32-5]

Kakaki

This protective appendage must have been an early forerunner of the bell-frame or Garland. I therefore decided that such a strengthening of the bell-end would be most appropriate. However, as the rim brass had to be fairly thin to allow of it being hammered and stretched to lie along the inside of the bell, it was not very strong. So I cut another ring, slightly larger in circumference, to slip over the finished bell to lie back to back with the first rim.

The flare was intended to begin at the 22mm at the top T socket and increase regularly to a diameter of 110mm at the end of the bell. The curve intended can be seen from the photograph of the Pompeian original.
I treated the bell section rather like an outsize, self-adhesive patch for a tapered tube.

The result left much to be desired, but did look convincing.

The two T sockets to hold the wooded cross-piece were built up out of 2 layers of 1mm wall tubing, with a filler of 5mm.
Back-Bow

This, a length of 1.9m, was taken in one piece from 19mm OD, 5mm thick tubing, tapered to 16mm at one end and expanded to 22mm at the other. Thus the joins, potentially weak points, are inside the T sockets.

"Mouth-Pipe"

This looks short (0.7m), compared with those on other modern reconstructions, but as already stated (page 2), the original from Pompeii shows similar proportions. Another point worthy of consideration is that this first section is (apparently) only supported at one end and is therefore extremely vulnerable. But, on this point M. Fahillon must have pondered this problem too, since for one of his reproductions, (2) he supplied a supporting piece of brass (?) between the receiver and the wooden cross-piece. I have supplied a similar support but ringing the receiver just below the mouth-piece.

Receiver and Mouth-Piece

Many originals, being of thick metal, have been unearthed by archaeologists and Behn provides a selection of possibilities.

The receiver is almost cylindrical outside, just tapering slightly to the detachable mouth-piece.
I found the mouth-piece, with sharp edge and narrow throat, made centreing notes very difficult, and for playing purposes, supplied a cut-down cornet mouth-piece.

Using this latter I was able to produce a good fat, incisive tone, from the fundamental up through 16 harmonics. Played softly, the instrument produced a sound not unlike the French horn in F, but, played Brasse, it really did produce the sort of sound characterised in the Latin quotations mentioned earlier, page 1. And, it could certainly sound "Grave", if this adjective corresponds to the much-valued Roman quality of "Gravitas".

Designed as a signal horn, it should possess good "carrying" qualities. Tests are being carried out on the instrument and I await the results.

I think that this instrument is of the Genus Tornu, Species Tuba Curva. According to Grove's Dictionary (new edition) "the 2nd (3rd sic) Augusta Legion had on its strength 39 Tubicines and 36 Cornicines," but what instruments they played is anyone's guess! Behn has, "Der Lituus vielleicht war das signalinstrument der Auxiliar-Kohorten, während die Tuba ausschließlich den Legionen diente." (Behn: Die Musik in römischen Heere)
The clarion call of a Roman battle trumpet sounded in a quiet woodland glade at Holt on Saturday — the first time such a sound has been heard in Britain for more than 1600 years.

The trumpet — a reproduction of a similar instrument discovered at Pompeii at the end of the 19th century — was being demonstrated at Gresham's School, Holt, by members of the Roman Military Research Society.

Mr. John Eagle, one of five members of the society visiting the school, said the instrument was made by Mr. Peter Barton, of Kensington, who restores more conventional wind instruments for a living.

It will be used for research into ways in which the Roman army signalled battles; what effect the wind had on its range; how far away it could be heard by legionnaires wearing different types of helmet; in woodland, in the open, building up a picture of how the all-conquering Romans achieved their superior battle strategy.

Mr. Barton told an "EDP" reporter he based the curved design of the brass trumpet on a photograph in a British Museum catalogue of the Pompeii relic.

Much of the technical detail had been gleaned from a German periodical. The important bell end of the trumpet gave him the most difficulty, although he was helped by having photographs of a similar Nigerian instrument, a kakaki, which he had recently restored.

The periodical told him that the Pompeii instrument was pitched in the key of G, so Mr. Barton pitched his reproduction in the same key.

The main tube was more than 10 feet long, and Mr. Barton had to borrow a giant lead crucible for the molten metal.

The honour of sounding the first note from the reproduction trumpet at Saturday's event fell to Jeremy Furniss, a pupil at Gresham's who plays trumpet in the school orchestra.

Mr. Michael Barrett, head of general studies, said the demonstration by the Roman Military Research Society followed a successful visit two years ago by members of the Ermine Street Guard, another society researching into the Roman way of life.

It helped the pupils with their O-level Roman studies, the sixth-form general studies course and the school's archaeology unit which has been working on local Roman excavations.

Jeremy Furniss, a trumpet-player in Gresham's School orchestra gives a blast on a Roman battle trumpet, watched by Legionnaires Len Morgan, Ian Post and Leif Morgan.
FOMRHI quarterly has been supplying a forum for quick written quick communication between i.a. makers of historical musical instruments. Now that Anon. 533 has questioned my remarks on p.9, bull.13, I realize that I would today express myself slightly differently. The difference in tone between spun and hammerd bells on the oboe da caccia is perhaps not "enormous" but "noticeable" or "significant" or "interesting" or "fascinating." Is there really a scientific difference? Must we quantify all terms, making a table of increasing values for "enormous - stupendous - colossal - super-colossal?" I hope not. It is similar with the word "similar." Anon. 533 writes that the oboe da caccia and tenor oboe are "acoustically similar." Yes, they are both wind instruments, in fact both are double-reed instruments with "conical" bore. But there are also differences. Among the professional oboists I know, I think all would agree that there is an - I'm tempted to say - enormous difference in acoustical or musical behavior, i.e., in the audible effect and the ease with which the oboist produces it. This is what is important in my art. And I believe that art and science were much closer in the 18th century. Since the 19th century the demand for measureability and quantification in science have been obscuring our senses (another statement for which I can't bring scientific proof.) Now it is comforting to note that Anon. 533 has specifically repudiated this tack, but it seems nonetheless that this train of thought has significantly influenced him. He is willing to believe that there is a difference in tone between tenor oboes made of boxwood and maple, not because every experienced oboist (and here I fall into a blind test, because I don't know who wrote Comm. 533 and whether he might consider himself to be an experienced oboist...) agrees that there is an enormous difference in "sound" and "feel", but because he sees a difference in the bore surface and presumably because many scientists of the 19th and 20th century have gone on record saying that it is the bore and its surface, but not the material of the wall that influence the tone. (In 1974 at the Nuremberg Symposium, Reiner Weber reiterated this view.)

"What is important?" asks Anon. 533. To me it is the body of experienced opinion of fine musicians. This of course correlates with what Jeremy wrote in bull.35, p.5. Anyone is welcome to say "Paul Hailperin, who is that?" or "Sucks boo, I'm a finer musician than he." but I want to protest against the formulation of the question "Does an oboe da caccia with spun bell sound like a shawm or saxophone?" That is simply crude, like demanding that I show the difference on an oscilloscope. I value the opportunity to swap experience in the pages of FOMRHI, and I hope that no members with formal scientific training (and I do value their own specific contributions) will enlighten us to the extent that we no longer dare report what we hear, that we no longer consider nuances of tone between oboe da caccia and saxophone.
A spun bell is indeed quicker and cheaper to make and at least more consistently mediocre. Must we really make an all-or-nothing decision (with the insidious implication that better tone quality is only for imbeciles who consider themselves "more authentick")? There should be room for both those who want a first class instrument despite the higher price, and for those who prefer or are constrained by finances to take a cheaper instrument with slightly less exciting tone.

In closing I will confess that I had overlooked in my remarks in bull/13 to report that I had indeed tried a double blind test. With experienced baroque oboe players - i.e. not a random sample - the result was positive.

FoMHRI Comm. no.544 Making a bodhran shell without steaming

For a shell of approximately 18" diameter prepare 32 strips of mahogany 3½" long and ½" thick of the following cross-section:

```
1.718"
1.767"
0.25"
```

Glue the angled edges together one segment at a time. Inside the completed shell glue a medial hoop 1" wide and 1/8" thick, and two edge hoops ½" wide and 1/8" thick, all of pine. Use plenty of glue and plenty of clamps! Round the outside of the shell carefully with sandpaper, then fit the crosspiece and goatskin head in the usual way. Distin's 1857 Monster Drum, which was really an enormous bodhran, was made in this way: the rim consisted of thirty dovetailed pieces.

* * * * * * *

David Z. Crookes
On making stitched drum heads

In "Making Early Percussion Instruments", pl6 ff, JM gives a method of attaching a drum skin to a rope ring. This Comm. describes what I have found to be a simpler method of achieving the same result.

First of all, make a disc the same diameter as the outside of the drum shell, and of suitable thickness. For a tabor about 9 in. diameter (220 mm) I use a disc 3 in (19 mm) thick, for a 13 in. (330 mm) tabor one 1 1/2 in. (32 mm) thick, but there is nothing critical in this: these sizes give heads that look about right. Any material can be used for the discs, fortunately; I have used chipboard. But it is a good idea to chamfer one corner to obviate any risk of cutting the skin, and to varnish or paint the disc so that it is waterproof. Mark a suitable number of radii on one surface of the disc to serve as guidelines for making holes in the skin after it has been stitched.

Next, prepare the rope ring by e.g. splicing or stitching, so that it is a reasonably tight fit round the disc. Then take the well-soaked skin and spread it on a smooth table top with the outside upwards. Lay the disc in the middle of the skin, and gather the skin up around it, holding it in place with a piece of string. Even out the puckers around the edge of the disc, and pull the skin well up.

Now the rope ring can be put on and the skin stitched. I use a stout linen thread in a leather needle, stitching over the rope ring and pulling the loose edge of the skin well in, with stitches about 3/16 in. (5 mm) apart all the way round. A large diameter head will certainly take long enough to do that the skin will need to be wetted from time to time; a small sponge is useful.

When the stitching is complete, trim off excess skin and punch holes for the tensioning ropes using a wad punch. This is an easy operation while the skin is still wet. Then take the finished head off the disc, and turn it inside out.

Might JM be permitted to add the comment that this seems an excellent idea and will make very much easier the most difficult and certainly most tedious operation in the whole process of drum making when one wants to avoid the use of flesh- and counter-hoops. Can I also add one suggestion that might be worth trying? Working with the skin and disc on a damp foam pad (with a sheet of polythene underneath to protect table top or knees) might possibly obviate the need to rewet the skin while stitching. Thank you, Ian; if there's ever another edition of the book, may I include this idea?
Three unrelated rebukes

1. Much of the "authentic" flute-playing that we hear nowadays — I have more than one leading exponent in mind — is badly out of tune. Is the early flute presently in the same position as the cornett of fifteen years ago (viz. have people not learnt to play it yet)? Or is it simply impossible to play the "authentic" flute in tune, and if so wouldn't it be a good idea to throw the useless thing away, to stop quoting Quantz by the cubic yard, and to use a modern flute? In a situation where authenticity means rotten intonation only an unmusical maniac will want to be authentic.

2. We have abolished the cellamba. The lunatics among us — haud pauci — have deified the viol. Is it not time for us to authenticate our manner of playing the cello? The instrument can be supported in one of four ways: (i) by gripping it between the legs; (ii) by letting a short wooden "spike" pass its weight to the floor; (iii) by resting it on a resonance platform beside which the player stands to play; (iv) by letting a long metal spike pass its weight to the floor. While no. (i) was the commonest method of support until the mid-nineteenth century, nos. (ii) and (iii) obtained to some extent from baroque times (no. (iii) usually in the context of a large ensemble). No. (iv) is all wrong for anything pre-romantic. It makes for an ease of playing which the early composers never envisaged, and which distances the player from his instrument. There is a natural rectitude about no. (i) that will be appreciated best by those who have employed it. The notes of a piece are not abstract (only the sub-intelligent readers of record sleeves really believe that "Bach was by nature a mathematician"); they have been conceived in the awareness of contemporaneous techniques. No. (i) allows you what no. (iv) precludes: an intimacy of relation with your cello, and a proximity to the composer's intention.

What am I saying? That a Chinese orange-box cello gripped between the legs will get you closer to baroque music than a perfect period copy anachronously spiked. It may well be difficult for an orthodox modern cellist to eschew his existent technique when he joins the early music bandwagon, and to unlearn the accustomed ease of no. (iv), but he must make the effort. In music as in so much of life, it is precisely the desire for ease that begets complacency and infidelity.

3. Further to comm. 523

Speaking of lutanists who still use nylon, Ephraim Segerman says: "When they learn to retune while playing (as Baron in 1727 stated any master could do), then gut stringing will be the norm." What an amazing lapse from common sense! It is and always has been quite impossible to retune while playing. The fact that Baron said any master could do it proves only that Baron was talking through his hat. If he meant that it was occasionally possible to retune one string during a long rest in a slow-moving piece, then he should have said so. Let me test his general dictum with a specific question. Where and how would you retune while playing the first gavotte from Bach's G minor lute suite?

We should neither venerate nor repeat nonsense merely on the grounds of its venerability.

* * * * * * *

My three rebukes are meant to be provocative, but they are written in the friendliest of spirits.

* * * * * * *

David Z. Crookes
Concerning the use of a spike, Fig. 1 is a 5-string violone illustrated in J. C. Heigel's "Musicalisches Theater" from early in the 18th century. Figure 2 is an illustration of a cello painted on a mid 18th century goblet (Fig. 134 in Buchner's 1973 "Musical Instruments of the World"). Concerning tuning while playing, Figure 3 is from the introduction of Carl Flesch's "The Art of Violin Playing" (1923).

**FIGURE 1**

As regards tuning in general, I believe that the strings should invariably be tuned with the left hand. Aside from the impression of awkwardness and inconvenience produced when the peg is turned by the right hand, this procedure makes it impossible to tune while playing. For instance, in the Bach Chaconne, which takes about 17 minutes to play, the E-string frequently drops half a tone lower, and if the performance of the composition is not to be interrupted, it is necessary to tune at the following places:

![Bach Chaconne](image)

When playing the D major Concerto by Paganini, in the Wilhelm edition, the E-string, as a rule, is also in a deplorable condition before the second entrance of the Cantilena: here the violinist has only a very brief space of time to devote to tuning:

![Paganini Concerto](image)

Above all things, one must be sure that the peg is so firmly set that it cannot slip back. For this reason the string should be mounted in a special way. The extreme end of the string must be firmly laid down (see III. No. 1, in Appendix), after which it is simply rolled up. At the same time the string leans against the inner wall of the peg-box, which supports it and prevents it from rolling back again (III. No. 2). The tuning should be done by the left hand, using the index finger as a lever, while the thumb (III. No. 3) in the case of the A- and E-strings, and in that of the G- and D-strings, the ring-finger and little finger, should be used for the counter-pressure (III. No. 4). I would never allow a pupil to appear in public unless I were assured that he could adjust his strings in the manner as above described, and possessed the necessary skill to tune with his left hand.
The subject of various iron alloy wires which may have been used for musical instrument strings has served as the basis for a deal of often rather speculative discussion in the FQ. While looking for material that might help in determining the pitches to which 18th century Swedish strung keyboard instruments were tuned, a good deal of evidence has turned up which clearly indicates that a distinction was made between iron wire and steel wire from as early as the late 16th century. The mid-18th and early-19th century sources are totally unambiguous in describing the differences in the production techniques and physical properties of these two materials. Lists of the uses to which steel wire was put invariably do not include musical instruments, and similar descriptions of the uses of iron wire invariably do include musical instruments. Since no steel wire has turned up among the rather large numbers of bits and pieces of strings found on 16th, 17th, and 18th century keyboard instruments, it can easily be assumed that the technological history of steel wire was not relevant to that of keyboard instruments until the development of the modern piano.

The correctness of this assumption has been called into question on the basis of indirect evidence as described, for example, in Comm. 440. The main problem was that a number of late 16th century wire strung fretted instruments could not reasonably have been strung with wire of as low a tensile strength as that likely to have been possessed by the iron wire of that day. There is, however, documentary material which has not yet been considered in this discussion, and it is likely that this will shed a good deal of light on the matter. The following text has been taken from a substantially longer report which has just been completed. Apologies are made for any redundancy or incoherence which may result from the material having been lifted out of context, as well as for the lack of specific references. (Details on the full text of the report will be in JM's hands in time for publication in the October FQ.)

Near the end of the 16th century a wire drawer named Johann Gerdes who worked in the old iron wire manufacturing town of Altena (in Westphalia), found a way to draw steel into wire. The drawing of steel wire then slowly developed into an important part of the local industry. Although this was still "sehr unbedeutend" (very unimportant) in 1634, by 1678 quality standards and regulations for the production of steel wire had become necessary.

At some time around 1670, a local poet named Rumpe described the countryside and industry of Altena in his "Teutsches Carmen". This poem is a main source of information about Gerdes. After discussing the iron industry, which had supported almost the entire town for centuries, Rumpe describes Gerdes' achievement:

"Es ist beinahe hundert Jahr,
Dass noch kein Stahl gezogen war.
Jetzt ist's ein Handel durch Gottes Segen,
Daran ist Altena viel gelegen.
Ein Bürger, so Johann Gerdes genannt,
Der fing es an durch seinen Verstand.
Er brauchte dazu viel Mittel und Rat,
Dass Stahl an Draht gezogen ward.
Die besten Nadeln, so je erdacht,
Die werden aus dem Draht gemacht;
Man braucht ihn auf dem Instrument,
Er kommt auch sonst in viele Händ'.
Den Fischern ist er auch bekannt,
Almost one hundred years ago, steel had yet to be drawn into wire. Now, by God’s grace it has come into trade which is very important for Altena. A citizen by the name of Johann Gerdes was clever enough to start this. Through much of his trial and effort, steel was drawn into wire. The best needles ever imagined are made from this wire. It is used on instruments, and comes otherwise into many hands. It is known to the fishermen who use it to land fish. It is made according to a standard so that it cannot be complained about by anyone.

Gerdes is elsewhere reported to have been frustrated in his attempts at drawing steel into wire, whereupon he annoyedly threw the material with which he had been working "wo jedermann sein Wasser abschlage" (where everyone casts his water). Having regretted this action, he retrieved the steel rod and was subsequently able to draw it into wire. The wives and children of the workers in the Altena wire mills are reported to have collected their urine and brought it to the mills, where it was used in the process of wire drawing well into the 19th century.

It is generally assumed that the urine served both as a lubricant and had a chemical effect on the wire. In any case, Gerdes had discovered a method for drawing steel into wire. He had not simply developed means for hardening iron wire which had already been drawn. The technique of case hardening iron wire had already been developed by the time Gerdes is supposed to have made his innovation. In Jost Amman’s and Hans Sachs’ 1568 "Ständebuch", the following entry is made under the heading needle maker:

Ich mach Nadel aus Eysendraht
Schneid die leng jeder gattung glatt /
Darnach ichs feyl / mach ohr und spitzn /
Alsddann hert ichs ins Feuwers hitzn / . . .

(I make needles out of iron wire. I smoothly cut lengths for all types. Then I file it, and make the eye and point. Afterwards I harden it in the heat of the fire.)

This heat treatment may be assumed to be equivalent to the case hardening process of the 18th century Swedish needle makers who also used iron, rather than steel wire. (In Swedish 18th century practice steel was differentiated from iron solely on the ability of the former to be hardened by sudden cooling from red heat. Iron could only be hardened after carburization, i.e. case hardened.)

The 18th century references to the use of steel wire all relate to needles, fishhooks, and small forged implements. None of the relatively large amount of wire found together with the keyboard instruments of that time is of steel. Indeed, the elasticity which was explicitly regarded as an important property of good music wire, and the ductility necessary for as mundane an operation as wrapping this wire around a small diameter tuning pin, seem to be in clear opposition to the stiffness and hardness required by needles and fishhooks. Nonetheless, the Rumpe poem makes clear reference to the use of steel on instruments. Unless he meant something other than musical instruments, or was simply in error (although unlikely in context, he may have confused iron and steel wire in this one application), there must have been some reasonably well-known steel strung musical instrument(s) in the late 17th century.

Iron wire was generally regarded as entirely satisfactory for use on musical instruments. Presumably steel would have been used only if iron were in some way inadequate. An obvious difference between cold-drawn iron and steel wires is the superior tensile strength of the latter.
Since it is hard to imagine any tonal advantage in using the less ductile and stiffer steel, it may be assumed that the string lengths of steel strung instruments resulted in greater stress levels than could be withstood by iron strings. If this assumption is valid, it then follows that no steel strung instrument could have existed prior to the development of the techniques necessary for drawing steel wire.

In 1974, Segerman and Abbott called attention to the fact that the ranges of wire-strung fretted instruments were expanded upwards at the end of the 16th century. The orpharion described by Praetorius was taken in illustration of this development, and it was stated that ordinary iron music wire could not have been strong enough for use on an instrument with its string lengths. The assumption was made that suitable string material had become available with the development of techniques for case hardening iron wire. In 1983, Segerman elaborated upon the musical instrument evidence for the existence of a high-strength iron alloy wire which first became available at the end of the 16th century and was in use for several decades thereafter. It is clear on the basis of his discussion, that several instruments used during this period required iron alloy strings with tensile strengths up to 50% higher than the maximum values for the purer iron wires described in the present paper (from which this Comm is excerpted). The requisite tensile strength is, however, possessed by the low carbon steels for which measurements are also given. (Despite anything that I may have said in earlier Comms, maximum tensile strengths for iron wires with carbon contents of less than about 0.05% lie somewhere in the neighborhood of 1200 MPa. Steels with as low a carbon content as 0.35% can be drawn to almost twice this strength. For reference, modern piano wire has a carbon content of about 0.85 to 1.0%.) Thus Gerdes' innovation would have provided the material necessary to allow for the modification of wire-strung fretted instruments towards the end of the 16th century.

It should be noted that the technology for case hardening iron music wire may also have existed. The needle makers of that time were treating iron wire in this manner, and it may have been possible for the string makers to have done the same. Increases in tensile strength of 45% have been reported as a result of case hardening low-carbon steel rods, and it may be possible for similar results to be obtained with finer wires. Any such wire would, however, be far less ductile than a cold-drawn steel wire. Since there is no need to assume the use of such a technique, it may be accepted that Gerdes' material was the steel which could have led to the developments with late 16th century fretted instruments. Rumpe's reference to steel strung instruments later in the 17th century may suggest either that the late 16th century types did not go out of fashion as early as is believed, or that steel wire remained in use on other fretted instruments even though it may not have been necessary, and despite the fact that it was not used on keyboard instruments at all.
When Djilda received O'Kelly's Comm (which included Comm 527 and the table given in Bull Supp 34), she decided to reject it because it was not about historical instruments (and so needs extra usefulness or interest to deserve inclusion), and it was done before in Hodgson's Comm 177. She handed it to me in case I thought differently and could convince her otherwise. I felt that the heavy strings in O'Kelly's table that Hodgson omitted were only useful for tuning lutes much lower than they were designed for, and that the only real advantage of O'Kelly's table over Hodgson's or using Pyramid's tables directly was in giving outside diameters, which was of marginal value. So I didn't feel strongly enough to argue Djilda into publishing the Comm. But I drafted a detailed referee's report for the author's benefit, suggesting amongst other things that acknowledging previous work (and workers) in the field, and comparing his work with theirs is both courteous to them and helpful to the reader for evaluating his contribution.

O'Kelly in Comm 526 is correct in stating that he never received this report or any communication from either Djilda or me about his original Comm. For this he deserves a humble public apology (I gave him a verbal apology at the last Early Instruments Fair), and it is hereby given. What happened was that Djilda thought that I was sending it out, and I thought that she was sending it out, and we both forgot about it. But this discourtesy is inexcusable.

I had once tried to deduce equivalent diameters from Pyramid's tables and found the job impossible because the values in the tables were not self-consistent and it was not apparent where the errors were. I therefore don't share O'Kelly's trust in the accuracy of the entries in those tables. The wrong implied density of nylon in O'Kelly's formula supports my view, and so I remain convinced that his PN values are too high.

O'Kelly in Comm 526 is essentially correct when he mentions "the uncontrollable decimal point" on my calculator. Actually, Djilda keeps borrowing my calculator and I sometimes get reduced to using a slide rule (and it seems that I'm out of practice in its use). In taking the square roots of the density ratios, I read off the wrong point. So the constants in O'Kelly's formula, according to my input figures, should be .894, .370 and .352 for gut, steel and brass respectively. I therefore retract my statement about any stringing disasters using O'Kelly's formulas for metal strings (I can't imagine when these formulas will ever be used). If this requires an apology, it is hereby given.

Recently, I was asked to replace some old nylon strings on a friend's lute where the maker's stringing list was not available. Not keeping a stock of various Pyramid strings (as would lute makers who specialise in nylon-strung lutes), I measured outside diameters and used O'Kelly's table. The identification was not definitive, but judgement based on some experience with tension profiles of nylon lute stringing resolved the ambiguities. This convinced me that O'Kelly's table was worth publishing and I did so. I included his Comm 527 in the last issue because O'Kelly feels so strongly about it, there was room, and I hate to stop people from having their say.
The Lengths of Bows in the Baroque

It is clear from illustrations of the baroque that, broadly speaking, larger instruments had longer bows and smaller instruments had shorter bows. But instrument size and bow length can be measured in many ways.

Obvious measures of instrument size are total length, body length and string stop. Measures of bow length could be total length (including a frog-end bauble), stick length, distance between hair-fixing points on the stick, or free hair length available for bowing. There is no consistent relationship that I can find between any one measure of instruments and a particular measure of bows, so I've settled for describing the size relationships by concentrating on string stop and bow stick length. When quoting early authors that mention bow length, I assume that stick length was the intention.

Table 1 gives the string stops, stick lengths and ratios of these as measured on Praetorius's (1619) drawings. For the treble and bass violins, the tips of the bows are hidden behind the bodies, so the stick lengths listed are the maximum that they could be. It is unlikely that these bows were much shorter, since in the other drawings, the tips just project past the bodies.

Table 1 also gives the same information on Mersenne's (1636) drawings of treble and bass violins (plate 35). Mersenne gave no absolute size information on these instruments. These drawings were more carefully made than most in the book, and the size relationship between the two instruments is very close to that given by Praetorius. Various measures of size were used in comparing with Praetorius's instruments to arrive at an average scale factor to get full-size lengths from Mersenne's drawings.

Considering Praetorius's viols, the pattern seems to be that for medium-sized instruments, the bow length is about the same as the string stop, or slightly longer. As the string stop gets quite long, the bow length falls behind and remains shorter, while when the string stop gets quite short, the bow length also falls behind and remains longer than the stop. The bass viol seems anomalous, but its size is really too small for a tuning a fourth lower than the alto/tenor (perhaps for a player with short fingers), and the bow length seems appropriate for a full-size bass viol.

Praetorius's lyras (da braccio and da gamba) both have bows half-again as long as the string stop. The lyra da gamba (lyrone) has the longest bow in the book. Long bows are appropriate for the playing style on these instruments, which includes bowing long-held chords.

Bow lengths for the violin family are similar to those for viols in the sense that the increment of length decrease gets smaller as the instrument gets smaller, making the ratio of bow length to string stop bigger. But the bow length for a given string stop is longer on violins than on viols. Mersenne's treble violin is quite similar to Praetorius's, with the bow about one and a half times the string stop in length, about 50 cm. Mersenne's bass violin on the other hand has a shorter bow, just slightly longer than the string stop.

Various illustrations from early in the 17th century that I've measured are consistent with this picture: viol bows being about the same length as (or a bit longer than) the string stops and the violin bow being about 50 cm long.

The Talbot ms gives information on instrument sizes and bow lengths from late in the 17th century. This is given on Table 2. We have no reason to suspect that, in England at
least, the lengths of viol bows had changed since earlier in the century. The ratio of bow length to string stop changes very smoothly, by about 0.1 for every 4 inches (or 10 cm) difference in string stop.

The bass violin measured was one of the Italian type, but the relationship between its bow length and string stop is the same as that of Mersenne's larger French bass violin. The few early 18th century illustrations of bass violins that I've seen are similar, showing the bow length slightly longer than the string stop.

The situation with the treble violin bow had changed considerably by Talbot's time. The shortest bow used then was 61 cm long and it was called the "Consort" bow. This is 10 cm longer than the usual early-17th century bow. With his listing of the dimensions of the treble violin, Talbot included the Consort bow plus the lengths 26, 26.5 and 27 inches bracketed together as representing "the length of the Bow for Solos or Sonatas". At another point in the ms, Talbot wrote: "Bow of Violin not under 24 inches from there to 27.5 at most. 27, 26 25 1/2 Solo Bow." It is not clear here whether there was a multi-purpose bow for both solos and sonatas or whether there were recognisably different solo and sonata bows with some ambiguity about their length relationship. Nevertheless, it is clear that solos and sonatas were considered as different musical applications for the violin and its bow, and these were distinct from the usual ensemble application implied by "Consort".

In 1776, Hawkins wrote "The bow of the violin has been gradually increasing in length for the last 70 years; it is now about 28 inches. In the year 1720, a bow of 24 inches was, on account of its length, called a Sonata bow; the common bow was shorter". He is consistent with Talbot in that the Sonata bow was the longest type and that one type was 24 inches long. We can assume that Hawkins's shorter bow called "common" is the same as Talbot's "Consort" bow. The inconsistency is as to which one was 24 inches long. I trust Talbot who was on the spot around 1700 and suspect that Hawkins's account suffers from the all-too-human failing of trying to fit the facts to an impression of change which gets exaggerated as difference in time grows.

There is no reason to question Talbot's bow lengths. For Hawkins to be right, English bows will have had to shrink between the 1670's and 1720. This is quite unlikely, and a much more likely alternative is that there was no significant change in bow lengths during that period. Talbot's maximum length was 27.5 inches, which is a few mm less than 70 cm. Several catalogues of museum collections and offerings by bow makers list violin bows representing English practice c. 1700 that are longer than 70 cm. In the light of the above, it is rather more likely that such bows are either younger or not English.

In situations that demand answers to questions, it is quite appropriate for the people most likely to have whatever evidence there is that bears on the questions to give the best answers they can. When the evidence is almost non-existent, a best guess can be useful. When such a guess remains unchallenged for some time, the fact that it was originally a wild guess is often forgotten and it becomes established dogma. The fiddle world is riddled with such dogma where the nature and strength of the original evidence is well forgotten.

The incentives for identifying pre-Tourte bows (which are usually anonymous) as to decade and country of origin have become strong only in recent years. The dogma is rapidly building up. Unfortunately, Talbot's information has not properly been taken into consideration. For instance, a violin bow that is shorter than 70 cm tends to be called "French" when it could easily be English (or any other country for that matter). In 1702 Raguenet wrote that French bows were much shorter than Italian ones. The famous painting of a French violinist by Gerard Dou (1665) shows a bow about 50 cm long. It seems that the French might have kept the usual early-17th century bow length longer than others. By 1700 the French could easily be using what Talbot called the "Consort"
bow and Raguenet might have been comparing this bow with the Italian "sonata" bow. The dogma that short bows are "French dance" bows does the French an injustice since the same bows were used for all French violin music, and this involved much more than dance.

Much of the dating dogma on early bows concentrates on head size. A minimal head just thick enough to hold the hair wedge is considered to be a 17th century bow characteristic. With such a head, the distance between stick and hair at the stick’s thinnest point (just past the head) can be less than half the distance between stick and hair at the frog. It is considered that by 1750 the head is so high that these two distances are equal. The change is supposed to be continuous, starting around 1680. Then by simple proportions (which could be done by arithmetic, but I imagine visual estimate is the favoured method) the bow date between these two end points is readily determined. No-one says it is done this way, but the dates arrived at seem to fit what this procedure leads to.

Strong doubt on the validity of this approach is cast by two examples of bows of both sizes of heads co-existing in the same musical environment. The Stradivari relics at the Cremona Municipal Museum include a template of a truly minimal bow tip as well as one with a stick-to-hair distance ratio of over two-thirds. After his death in 1770, Tartini’s violin and two bows were preserved and are in Trieste. Both bows are of the clip-in frog type, weigh less than 50 gm and are about 71.5 cm long. One is of the minimal-head type that would be considered of the 17th century if one didn’t know better, and the other has the full-height head expected of the period.

The low-headed Tartini bow has its centre of gravity (balance point) more than 2 cm closer to the frog than the high-headed bow. This gives it a lighter feel and makes it more appropriate for fast passage work and arpeggios one would play in unaccompanied solo music. The heavier feel of the high-headed bow makes it more appropriate for the full singing tone with slurred ornamentation that is needed for playing sonatas. It is therefore not unreasonable to suggest that these could perhaps be what a baroque Englishman would have called a solo and a sonata bow respectively.

There are a number of people who know much more about early bows than myself. They have handled and carefully observed more surviving bows than I and they have carefully observed more early illustrations than I. They are also passing judgement on the date and provenance of early bows without divulging either the interpretative code which leads from evidence to conclusions or how that code was arrived at. I for one, will treat their pronouncement with the utmost of scepticism until they are more forthcoming. They are making historical statements and these should not be accepted unless they follow the rules of historical scholarship. The fact that the fiddle world has been getting away with making historical statements without the backing of historical scholarship is no excuse when the bow experts have postgraduate university degrees and are even professors. Scholarship is not taught in a fiddle-dealer’s apprenticeship.
### TABLE 1

<table>
<thead>
<tr>
<th>Instrument</th>
<th>String Stop</th>
<th>Stick Length</th>
<th>Ratio String Stop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large contrabass</td>
<td>129</td>
<td>97</td>
<td>.75</td>
</tr>
<tr>
<td>Violine</td>
<td>103</td>
<td>85</td>
<td>.82</td>
</tr>
<tr>
<td>Bass viol da gamba</td>
<td>74</td>
<td>82</td>
<td>1.11</td>
</tr>
<tr>
<td>Viola bastard</td>
<td>74</td>
<td>75</td>
<td>1.01</td>
</tr>
<tr>
<td>Alto/Tenor viol</td>
<td>58</td>
<td>61</td>
<td>1.04</td>
</tr>
<tr>
<td>Treble viol</td>
<td>41</td>
<td>51</td>
<td>1.25</td>
</tr>
<tr>
<td>Lyra da braccio</td>
<td>37</td>
<td>56</td>
<td>1.51</td>
</tr>
<tr>
<td>Lyrone</td>
<td>67</td>
<td>100</td>
<td>1.48</td>
</tr>
<tr>
<td>Bass violin</td>
<td>72</td>
<td>max 94</td>
<td>max 1.31</td>
</tr>
<tr>
<td>Tenor violin</td>
<td>35</td>
<td>56</td>
<td>1.58</td>
</tr>
<tr>
<td>Treble violin</td>
<td>30</td>
<td>max 50</td>
<td>max 1.68</td>
</tr>
<tr>
<td>Piccolo violin</td>
<td>22</td>
<td>45</td>
<td>2.00</td>
</tr>
</tbody>
</table>

**MERSENNE (1636)**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>String Stop</th>
<th>Stick Length</th>
<th>Ratio String Stop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bass violin</td>
<td>71</td>
<td>76</td>
<td>1.07</td>
</tr>
<tr>
<td>Treble violin</td>
<td>31</td>
<td>47</td>
<td>1.51</td>
</tr>
</tbody>
</table>

### TABLE 2

<table>
<thead>
<tr>
<th>Instrument</th>
<th>String Stop</th>
<th>Bow Length</th>
<th>Ratio String Stop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double bass viol (violone)</td>
<td>40 1/8</td>
<td>102</td>
<td>.79</td>
</tr>
<tr>
<td>Single bass viol (consort)</td>
<td>32</td>
<td>81</td>
<td>.97</td>
</tr>
<tr>
<td>Division viol</td>
<td>30</td>
<td>76</td>
<td>1.00</td>
</tr>
<tr>
<td>Lyra viol</td>
<td>28 1/8</td>
<td>71</td>
<td>1.07</td>
</tr>
<tr>
<td>Tenor viol</td>
<td>24</td>
<td>61</td>
<td>1.17</td>
</tr>
<tr>
<td>Bass violin</td>
<td>24 1/2</td>
<td>62</td>
<td>1.06</td>
</tr>
<tr>
<td>Treble violin</td>
<td>13</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>concert bow</td>
<td></td>
<td>24</td>
<td>1.65</td>
</tr>
<tr>
<td>solo bow</td>
<td></td>
<td>25 1/2-26</td>
<td>1.98 (av)</td>
</tr>
<tr>
<td>solo or sonata bow</td>
<td></td>
<td>26-27</td>
<td>2.04 (av)</td>
</tr>
<tr>
<td>longest bow</td>
<td></td>
<td>27 1/2</td>
<td>2.12</td>
</tr>
</tbody>
</table>
Converting Note Names & Cents to Frequency Values by Microcomputer.

There have been a number of suggestions of methods to convert a given note sharp or flat by a given number of cents to a frequency in HERTZ.

In FoMRHI articles these can be found under:

1) J. Montagu Comm.21 "Construction of a Monochord"
2) J. Montagu Bul.28 p.7 "Converting cents to Hertz"
3) R. Bigio Comm.436 "Converting cents to Hertz"
4) C. Karp Comm.443 "Converting note names to frequency values"

However it occurred to me that now personal microcomputers are so readily available, one could use their very definite advantages for this rather time consuming calculation. The following programme is for the Sinclair SPECTRUM (16k or 48k) and works as follows:

After the "title page" the operator is given a choice:

1) A MEMO which explains the variables, e.g. the notes of the chromatic equally tempered scale starting on c, c#, . . . b, ENTERED as 1, 2, . . . . . . . . 12. The actual octave: c1= lowest c on the piano, c2 an octave higher etc. (so that a 440 would be note 10 octave 4). Cents sharper are entered as say, 10.44 (= 44 cents sharper than a 440); 9.70 would be 30 cents flatter than a 440.

2) This carries out the conversion to frequency in Hz.

3) This carries out the conversion but in addition sounds the note which can then be used for comparison or tuning purposes.

The programme is given in 'print out' for those wishing to programme their Spectrums. For any FoMRHI member not wishing to type in the programme, I will offer to put the programme onto cassette if they will send me a blank cassette and return postage and packing.

For those not wishing to bother with the whole programme and all its 'frills' a minimum conversion programme will work by just using lines 410 to 440 inclusive and adding a further line:— 450 GO TO 410.
50 REM "cf...cents/frequency
100 PRINT AT 1,3; "To convert 'C
ENTS' (+ or -)
Y in Hz"
110 PRINT AT 15,3; "Press any ke
y to continue"
120 PAUSE 0:CLS
130 PRINT AT 4,2; "Select :-

1) Variables MEM
2) Conversion Pr
ograms
3) Conversion Pr
ograms + AUDIO

150 INPUT "ENTER 1,2 or 3 "; s
160 IF sel=1 THEN CLS : GO SUB
120
170 IF sel=2 THEN CLS : GO SUB
400
180 IF sel=3 THEN CLS : GO SUB
600
190 PAUSE 0:CLS:GO TO 130
195 RETURN
200 REM convert c->Hz
210 INPUT "note number= "; n
220 REM convert c->Hz + AUDIO
230 INPUT "octave number= "; r
240 LET f=55*(2^(r+(n-22)/12))
250 PRINT AT 10,1; "frequency = "
260 PRINT f,"Hz"
270 REM convert c->Hz
280 INPUT "octave number= "; r
290 LET f=55*(2^(r+(n-22)/12))
300 LET p=12*LN (f/261.6)/LN (2
310 PRINT AT 10,1; "frequency = "; f,"Hz"
320 BEEP 4,p
330 REM convert hz to audio
340 INPUT "note number= "; n
350 INPUT "octave number= "; r
360 LET f=55*(2^(r+(n-22)/12))
370 LET p=12*LN (f/261.6)/LN (2
380 PRINT AT 10,1; "frequency = "; f,"Hz"
390 BEEP 4,p
400 REM convert audio to audio
410 INPUT "Repeat note ? y or n "; a
420 IF a$="y" THEN GO TO 650
430 IF a$="n" THEN GO TO 130
440 REM variables MEM ...
450 PRINT AT 1,7; "Variables MEM
0:
460 PRINT AT 5,7; "note numbers
470 PRINT AT 7,1; "C C# D D# E F
480 PRINT AT 9,1; "G G# A A#
490 PRINT AT 12,7; "octave numb
500 PRINT AT 14,4; "< - C C1 C2 C
510 PRINT AT 16,9; "e.g. octave
520 PRINT AT 18,5; "containing
530 PRINT AT 20,1; "There are 10
540 PRINT AT 22,5; "cents between each note number
550 PRINT AT 24,5; "cents sharp
560 PRINT AT 26,5; "as 10.40
570 PRINT AT 28,5; "cents flat
580 PRINT AT 30,5; "as 9.90"
590 PRINT AT 32,5; "There are 10
600 PRINT AT 34,5; "cents between each note number
610 PRINT AT 36,5; "so
620 PRINT AT 38,5; "as 10.40
630 PRINT AT 40,5; "as 9.90"
640 PAUSE 0: RETURN
FoMRHI Comm. 552

Jeremy Montagu

Review of: Quarna: Vivere di Strumenti, Museo Teatrale alla Scala, Milano, 1984. 100 pp., illus.

This is a combination of exhibition catalogue (edited by Virginia Villa and Marco Tiella), account of the instrument makers of Quarna, and organological study of a few instruments. The catalogue itself, which is of a temporary exhibition at La Scala this spring, is a check-list with, for most of the instruments, a one-line entry, but that quite adequate for identification (eg: exhibition number, another number presumably a permanent catalogue number, Clarinetto Si bem., sist. Mueller a 14 chiavi (Alf. Rampone - Quarna)).

The first part describes Quarna geographically and sociologically, and then goes into the various instrument making firms which existed there, with family trees showing how the families of Forni, Rampone, Cazzani and Saltamerenda interlocked so that Quarna became, I suppose one might say, an Italian equivalent of La Couture or the wind part of Markneukirchen. There are a number of photos of makers, both those whose names we have on the instruments, the heads of the firms, and the workers at the benches; also some illustrations from catalogues, including one showing a member of a bicycle band (Fanfare ciclistiche) with bicycle and helicon (I remember seeing a number of such instruments in the Stearns Collection in Michigan), and, particularly interesting, a number of instruments, both the finished articles and their wooden prototypes — a wooden prototype of a contabasso ad ancia is rather a daunting thought, as is a bass sarrusophone with all keywork. It is, of course, the existence of these prototypes and other early working material that has given rise to Marco Tiella's query about other workshop material for instruments on pp.5 and 6 of the Bulletin in this Quarterly.

There is a short section by Vinicio Gai on a metallurgical study of some of the Quarna instruments, and a longer one by Gai again on Italian organological nomenclature, particularly on the upright valve trombone in tuba shape (see plate 89 in my Rom & Mod for an example of this by another Italian maker, which is now on display in the Bate Collection) and the flicorno and Bimboni's developments in this area.

FoMRHI Comm. 553

Jeremy Montagu

Review of: The Sounds of Prehistoric Scandinavia, 33 rpm record, edited prepared etc. by Cajsa Lund, with 32-page booklet illustrating all the instruments. EMI 1361031; Musicae Sveciae MS 101. (title in Swedish: Fornnordiska Klanger).

Obviously nobody knows what music was played in the Scandinavian Stone, Bronze and Iron Ages, but a good many instruments have survived, either complete or nearly enough complete that reconstructions can be made. This is the area in which Cajsa has been working for a number of years, and at last she has put together all that she has learned and has recorded the results. Her very detailed notes in the excellent booklet with the record make it very clear what is fact (ie what happens if you hit, shake, blow down, etc any of the instruments) and what is hypothetical (that they may have been played in this or that way or for this or that purpose). None of the examples are of the type we have heard on the Copenhagen Museum lur record (no Bronze Age Rag here); this is what the instruments sound like, with, quite often, a very possible musical use. Almost all the tracks were recorded in likely contexts; a child's rattle (or to be more exact a rattle that could be a child's one) is recorded among children at play; a cow-bell or animal lure among cows or in the forest or by the sea. If you are interested to know what archaeological instruments sounded like, this record is a must, and I hope that the various numbers cited above will be sufficient to identify it for

There are two short and two long articles in this first, and very welcome, issue of a new periodical. The two short are by Marco Tiella (L'antico nella musica attuale), who is still much involved with the Rovereto Academy even though his main work is now in Milan, and C. Canevari (Cenni storici sull'uso degli strumenti ad ancia doppia incapsulata). The longer ones really need reviews by someone whose Italian is better than mine; a brief description follows, and would anyone who would like to do a better job, please write in. The first is by R. Vettori, Lineamenti di una teoria del recupero storico-musicale; the second, by the Gruppo di Studio del Conservatorio 'Verdi' Milano, is La tecnica esecutiva degli strumenti a tastiera e del liuto nelle fonti storiche. This is divided into several sections, with quotations from the main writers on how to play the instruments in the periods when they were in use for both keyboards and lutes in the first two. The third is on the "pronuntia" of the instruments, which I take to be the problem of producing the right sound, taking the word "sound" in all its implications, including those controlled by the maker, those by the player, the scholar, the architect, and so on. In addition, there is an organological section, with plan drawings and section drawings of typical instruments, Italian, English, German and Flemish.


This is a fascinating book and will, I think, set a few cats among a few pigeons, so much so that it ought to be reviewed by more than one person; hence the heading above. I'll send it on to Eph and ask him to continue in the next Q, and perhaps also to send it on to anyone else whom he thinks might have other views again. Lindley has taken a number of sources, written texts, illustrations, and musical works, and analyzed them from the point of view of what temperament the frets should be set for. The last case, the musical works, does of course depend on subjective preference (does a beating or a smooth chord sound better?), but since he has probably more experience in dealing with, both setting and using, different temperaments than anyone else, his views carry considerable weight, especially when they are compared with those of people who, having once decided on a preference, use that fretting all the time. While he concludes that equal temperament fretting is never wrong, even before 1550, he emphasizes that many good players adjusted (and adjust) the frets by ear to give rather better intonation and mentions that meantone can also be useful, especially perhaps for Schlick and Milan. All his written texts are cited in the original and, in parallel column, English. His musical examples are usually given in tablatur (where relevant) and transcription, and often in facsimile also. Thus, while what he says may sometimes be his own opinion, the evidence is there for you to consider your own opinion on; if only everyone who wrote on this subject were as considerate to other peoples' views.

There are also appendices on other relevant matters, including some vocal and some keyboard music, another on tablature, another on some geometrical devices for fretting, and one by Gerhard Söhne on Lute Design and the Art of Proportion, which may also cause some discussion. This is not a book that any player of fretted instruments can ignore. Buy it, read it and discuss it — and write about it in FoMRHIQ.