THE ROBERT AP HUW MANUSCRIPT

AN EXPLORATION OF ITS POSSIBLE SOLUTIONS

4

TECHNIQUE

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1996

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INTRODUCTION

This account of my work on performing technique is designed to explain the ways in which it has been possible to address and finally resolve virtually all of the many outstanding issues concerning technique. There are two purposes to this.

Firstly and most immediately, conclusions are arrived at which are entirely practicable, not only each in isolation but all of them integrated into a consistent system whereby the whole of the text can be played without the need to modify any conclusions in an *ad hoc* manner. For this account is not just the product of an examination of the music text and an analysis of it by computer, but of the writer having memorized the whole of it and having played it using the techniques detailed here for twenty-five years, often intensively.

Secondly, this account forms an important part of a sequence of argument which spans several of the other parts of this whole work. An essential block of information on technique has to be derived from the nature of the instruments, so this Part 4: TECHNIQUE is itself very much predicated on Part 2 of this work: INSTRUMENTS.[1] In turn this volume uncovers some information which is vital for the solution of the problem of rhythm, so it forms much of the basis for Part 6: RHYTHM, which in conjunction with Part 5: METRE, makes possible Part 8: VERSE.

A common problem in the reconstruction and recovery of early music is the discovery of what technique was used to adapt a particular instrument in order to play a certain kind of music. But here we are largely compelled to address the problem in

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[1] For clarity, parts of this work are referred to in the upper case throughout.

reverse - how technique can be used to discover what kind of music was played. For the MS. and the other sources tell us more about technique than they do about the music directly. For example, the shaping of the melodic line is described operationally in terms of what the fingers do on strings, not as melody *per se*. Therefore it is extremely important to glean everything we can about technique, not just so that the music can be played in the correct and authentic way, but <u>before this</u>, that we can know what the music was.

Consequently, this account has to go into great detail. The methods used are straightforward but very lengthly: identifying what is unknown, amassing all the information we have and organizing it in such a way that it can be most effectively brought to bear on each problem.

As the writings of most past contributors to the subject of technique have necessarily been more promotional than they have been investigative, it is necessary here to break a lot of new ground. In particular, almost no contribution has been made towards an understanding of technique outside of the limited area of the movements named on p. 35 of the MS.:- on such issues as nail technique, the playing of single notes and chords, finger action and hand position. Within the area of the named movements, very little has been written on the subject of damping and on variants of the standard movements. Indeed an understanding of the basics of the standard movements has proved, over the centuries, to be so elusive that some commentators have suspected that the tradition was deliberately obscure.

Yet we have a great wealth of detail on technique available to us: the music text itself is packed with accurate detail. A key is provided on p. 35, which, although it is incomplete and rather

confused and (to us) overconcise, is clearly a genuine attempt to communicate the details of technique. We have expositions of technique in the grammars, and notices of it in poems and written descriptions.

Much of this account is taken up with the investigation of the fingering movements[2]:- a complex operation since no fewer than twenty-eight of them are identified, and for most of these it is necessary to derive <u>four</u> fundamental and essential aspects of technique:

1) the order in which the strings are to be plucked

2) which fingers are to be used to pluck

3) which strings are to be damped

4) which fingers are to be used to damp.

I believe that these movements were also executed according to fixed rules on duration, timing and accenting, and these I detail in Part 6: RHYTHM.

It is necessary to emphasize that much of this account is very technical, and because it is quite impractical to supply quotes from the text, this account <u>must</u> be read in conjunction with the text. Locations are specified according to the red pagination at the head of each page of the MS. (not the folio no.), followed by the line no.,[3] followed by the column no. As it is impractical to give multiple locations in full, the first

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[2] These have usually been described as 'ornaments', but here it is best to use 'movements' as they are structural and serve a different rôle from the ornaments of the mainstream of European music, and because we are mainly concerned here with the technique of their production, rather than with their contribution to melody and harmony.

[3] By line here is meant each frame or system of intabulated upper <u>and</u> lower parts combined. There are usually six of these lines on a page.

instance of a particular feature is given; thus (54.2.22 f) means a feature first appears at p. 54, line 2, column 22, and that there are other instances following this location.

Also it must be noted that much of the examination of the individual movements refers to the key provided on p. 35 of the MS., which is not the product of perfect draftsmanship. I advise caution against following the copies of the triangular notation on p. 35 provided by commentators, especially those of Dolmetsch and Polin - both of their copies are seriously inaccurate. It is necessary to read these sections in conjunction with at least a photographic facsimile of the original.

As with any manual activity, verbal description is no substitute for practical demonstration, and much of this account will be most comprehensible to those who are in a position to verify the practical details of what is and what is not feasible by playing. Unfortunately, the need to demonstrate the arguments prohibits this account from forming a tutor, but it is designed to act as the basis for one. A tutor need only be very small, since, as will be demonstrated, the music text is homogeneous enough to permit a systematic technique. A summary of the movements is provided in the Appendix.

I. OVERVIEW OF THE LITERATURE

Within the general field of technique, most contributions have focussed on the movements of p. 35, and within this specific area most commentators, particularly the earlier ones, have tended to ignore all the aspects of fingering; they have concentrated on the order in which the strings should be plucked. They have then moved directly from p. 35 of the MS. to some musical realisations of the fingering movements, without attempting to specify how the figures should be executed. Lewis Morris (and possibly one other as Rees suggests) led the way with his guesses, as he described them, written on p. 35 itself.

Most subsequent commentators have broadly followed Morris's interpretations as to the order of playing, with some alternative interpretations of one or two movements, and with some disagreement over whether the triangular notes on p. 35 represent just one quote of each figure or two quotes. It is not until Dowd that a detailed discussion is given of the order of playing, and not until Dart that a detailed exploration is offered of fingering techniques. The earlier literature is reviewed by Dowd. Here follows a brief overview of the main contributions to the subject of technique, from Dowd to date, in chronological order.[4]

DOWD, Robert E.: *British Museum Additional Manuscript 14905*, M.A. Dissertation (New York University), 1950, pp. 60-84.
Dowd broke with what had become the custom, best exemplified by Dolmetsch, of offering interpretations of the p. 35 movements without any exposition of the reasoning of the derivation.

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[4] Each of these writers has produced a single work which contains most or all of what they have written on the subject of technique, and these alone are reviewed here. It should be understood that in some cases their earlier writings have included material on technique.

Largely working from the directional cues afforded by the tablature symbols, which no doubt was the main basis on which his predecessors worked, he gives some reasoning for the derivation of his musical interpretations of the movements. Importantly, he appeals to examples of their usage in the music text of the MS. He interprets blocked triangular note-heads as up-beat grace notes. Generally he does not attempt to specify the fingering of the movements, and otherwise confines himself, regarding technique, to a conclusion that the nails were used.

DART, Thurston: 'Robert ap Huw's Manuscript of Welsh Harp Music (c. 1613)', *The Galpin Society Journal*, Vol. XXI, March (London, 1968), pp. 61-64.

Dart offers some new, ingenious suggestions: that the triangular notation may specify the fingers used to pluck, that blocked note-heads may indicate damped notes, and that the damping finger might not be the same as the one that plucked a note - what we could call covering-finger damping, in contrast to same-finger damping. Dart also specifies the possible fingering in full for each movement - the result of guess-work.

SCHAEFER, André: *Le Musica neu beroriaeth de Robert ap Huw*, M.A. Dissertation (University of Paris), 1973, pp. 60-80.

Schaefer, not following Dart, comes to a conclusion identical to Dart's first suggestion, and reasons a scheme assigning the plucking fingers to each movement. The scheme is different from Dart's, but it is more than guess-work. Further, Schaefer argues convincingly that in some movements certain notes are damped but he stops short of Dart's second suggestion that all blocked notes are damped. He declares that these dampings are to produce a *staccato* effect, and notes that it appears that in some movements this is achieved by covering-finger damping - again stopping

short, of Dart's third suggestion.

WHITTAKER, Paul D.: *British Museum Additional Manuscript 14905: an interpretation and re-examination of the music and text*, M.A. Dissertation (University of Wales), 1974, pt.1 pp. 79-131 & pt.2 i-ii.

Whittaker, not following Schaefer, demonstrates that Dart's scheme of the plucking fingers is impractical in its essence and also that it is not implemented consistently by Dart. Dart's identification of the damping fingers is also revealed to be impractical. Instead Whittaker evolves another scheme of assigning the plucking fingers, appealing to what is practicable in the context of the text. This scheme is the same as that reasoned by Schaefer. Whittaker accepts Dart's second suggestion, that blocked note-heads indicate damped notes, but concludes that same-finger damping was used in all movements except one.

POLIN, Claire, *The ap Huw Manuscript*, The Institute of Mediaeval Music - Musicological Studies, Vol.XXXIV (Henryville, 1982).

Polin describes Dart's second suggestion as eminently reasonable, but otherwise makes no comment on either Dart's or Whittaker's proposals (and does not cite Schaefer). Instead she provides musical interpretations of movements without fingering details, concentrating on directional cues in the manner of Dolmetsch and the early transcribers. Her interpretations differ markedly from theirs, however, in that she criticises the early transcriptions as over-elaborate.

ELLIS, Osian: *The Story of the Harp in Wales*, (Cardiff, 1991), pp. 33-34.

Ellis cites Dart and Polin, but does not pursue the issue of damping except for two movements, where probably the intention is same-finger damping. Unlike Polin, he does provide an

interpretation for the fingering of most of the pluckings, although the assignment of these is not based on any scheme such as that of Dart or that of Schaeffer and Whittaker.

An important point about the literature since Dowd is that it appears from a lack of citations that there have been some problems in commentators being aware of each other's work. This will probably be because so much has been unpublished and because of the growing international dimension of the contributions. Dowd and Schaefer are not cited as often as one might expect. In particular, Whittaker, Polin and Ellis do not cite Schaefer. Also Ellis does not cite Whittaker, and Schaefer does not cite Dart.

This lack of communication must have led to the apparent advances of 1968-1974 not being disseminated as fast and as widely as one would expect. But an interesting consequence of these communication problems is that sometimes the same conclusions have been arrived at by pairs of commentators working independently of one another apparently. It is interesting that these instances centre on the 1968-1974 advances, particularly Schaefer and Dart, and Whittaker and Schaefer.[5]

To sum up, the advances made 1968-1974 have not been pursued in recent years, but this has not been because of any refutation which has been offered. I would suggest that Whittaker's dissertation, because it consolidated on Dart's article and because it is by far the largest and most scholarly single work yet produced on the MS., comes closest to representing the 'leading edge' in research on technique. It must be very

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[5] For what it is worth, the present writer arrived at many of the same conclusions at that time quite independently of all three.

significant that some consensus was arrived at with the three contributions made during those years, so rare are areas of consensus in the whole field.

I believe that much can be done to consolidate these apparent advances, and that further advances in technique can be made. I think that p. 35 has already yielded up many of its secrets, but that the music text of the MS. has much to offer by supplying the <u>contexts</u> in which the symbols for the movements are used. For from these contexts it can be deduced that the fingering of a figure was consistent and that economy of movement, both of the hand and of the finger, was of paramount importance. Having established these principles it is then possible to use the data on juxtapositions to identify the fingerings used. This is a different approach from that often used before, where each movement has been considered primarily in the context of p. 35, which is really to say out of its natural context - the music text itself.

II. NAIL TECHNIQUE

Dolmetsch (p. 5) asserts that the nails were used to pluck the strings, and Dowd (p. 58), Ellis (1973, p. 85) and Polin (p. 24) agree. But other commentators have been non-committal, for example Crossley-Holland (1942, p. 149). Whether the nails or the flesh of the fingers were used to strike the strings is of course fundamental to technique, and this issue warrants detailed examination. Five arguments for nail technique, taken together, are conclusive:

1. <u>Context</u>. Nail technique was widespread throughout the remainder of the British Isles, and was gradually supplanted by fingertip technique. Given the earliness of the *cerdd dant* tradition relative to these developments elsewhere, we have some reason to expect that nail technique would have been used in Wales as well.

2. <u>References to the use of the nails</u>. In contemporary Welsh poems, the word for fingernail: '*ewin*' occurs in the context of harp-music:

Poed anolo fo ei fin
A'i gywydd a'i ddeg ewin   Dafydd ap Gwilym

Ni chân bardd yma i hardd hin
Gywydd gyda'i ddeg ewin   Dafydd ap Gwilym

Bu'n dwyn dan bob ewin dant
Bysedd Llef Gŵr neu Basant   Dafydd ab Edmwnd.

Telyn arian a ganwyd
ac ewin aur y gwin wyd   Pen. MSS 67, 75

The first two notices refers to informal self-accompaniment; the third to professional solo playing; the last probably refers to a tuning-key, unconnected to the use of the fingernails ('*ewin*' =

'ewingorn'?).

As discussed in Part 8: VERSE (Chapter VIII) in connection with percussion, there are descriptions in poems which suggest that musical performance had a strong percussive element. Some of these descriptions definitely relate to harping technique: - *'cliciadau'* - clicks :

> Cadw y llais, cyda'i wellhau,
> Ceudod yn llawn cliciadau;
> Plethiadau'n plethu ydynt,
> Pithagras un gerddflas gynt.   Gruffudd Hiraethog

and *'ticiadau'* - ticks :

> Ni chanodd, iawnrhodd anrheg,
> Diciedyn ar delyn deg,
> Nwyf pencerdd, mewn dwysgerdd dant
> Nas ceni yn ais ceunant.   Huw Ceiriog

> A'r eos mewn gwyddglos gwych,
> Rwyddgras iawnbwnc ireiddgrych,
> Plethiadau, ticiadau teg,
> Pur ddwyfol, peraidd ofeg.   Huw Ceiriog

Both 'click' and 'tick' would be better descriptions of nail technique than of fingertip technique.

   3. <u>Fingering terms p. 35</u>.

Kefn ewin: the back or ridge of a nail. Although it is technically possible that this was some special effect produced by the back of a short nail, embedded in a context of fingertip use, it is more likely that it describes a strike by the back of a long nail; what we could call a 'backstrike'. Such action is a feature of Peruvian metal-strung harp technique and of Bunting's description of what had been traditional in Ireland on metal-strung harps.

Krafiad dwbl / krafiad sengl / hanner krafiad. These terms for fingering movements hinge around *'crafiad'* which the

Geiriadur Prifysgol gives as a scratching, a scraping, a scoring. There is an abrasive quality to these usages which would be a much better description of the action of fingernails than of fingertips. Indeed 'scratches' in English is used by Staneyhurst when describing nail harp technique in Ireland.[6]

4. <u>Pictographs</u> on p. 35 and throughout the music text, in conjunction with the terms '*ysgwyd*' and '*krychu*'. These make it clear that back-and-forth movement on a string was commonplace. This was a technique available to all the digits of the upper hand except the little finger, so it is unlikely that the side of the fingers was used, and the technique is not practicable on the finger<u>tips</u> with short nails.

5. <u>String-spacing</u>. As described in Part 2: INSTRUMENTS, it can be inferred from the earliest extant harps from Ireland and Scotland that the spacing of the strings was very narrow - much narrower than on modern harps. That this was <u>also</u> the case in this Welsh tradition is confirmed by the width of some of the chords in the text, in particular that on occasion the forefinger and ring finger of the lower hand had to span an octave. A consequence of this narrow spacing, in its precise dimensions, is that it is very difficult to execute the narrow melodic sequences of the fingering movements with the fingertips, for the tips actually require more room than the nails. If one were to design a harp for tip use one would not use this narrow string-spacing, and one would have to sacrifice all of the really wide chords in the text because they would be unreachable (unless they were, with some awkwardness, arpeggiated, which I strongly doubt).

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[6] Incidentally, Polin (1982, p. 24) is mistaken in stating that Staneyhurst was referring to Welsh nail technique.

Practical Details of this Nail Technique

Because so many technical features of the music are so highly idiomatic, it has to be very important indeed that <u>no</u> performance techniques of harping are simply imported from elsewhere, that is, from another field of harping that might be considered exemplary or that may have been the previous experience of the harpist. It might be complained that the Irish evidence from the sixteenth century onwards should be taken as providing an exemplar, but this does remain to be demonstrated.[7]

Consequently, from the outset of my playing I have tried to allow my hand-position, finger action and attack to be determined solely by what is most effective in terms of speed, economy of movement, tone etc., and not by any preconceived expectations of what may be correct or effective. The results have been an action and an attack which happen to be very different from classical and modern 'folk' styles of harping, and from most of what we have been able to learn about the use of the metal-strung Irish harp as well.

I will discuss the style after the following examination of the fingering movements which dictate it. Here I will outline what the consequences have been for the shaping of the nails. The length of the nails of the upper hand is absolutely critical - any longer or shorter than the optimum and the effectiveness falls off dramatically. The optimum length for the fingernails is

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[7] Putting it briefly, I have the strong impression that there were important changes in Irish nail technique as a result of the abandonment of damping, which preceded the abandonment of nail use (and wire-strings). Most of the Irish evidence relates to nail use without damping (possibly facilitated by the adoption of thicker-gauge strings), and this is a very different performing environment from the earlier one we are addressing here in Wales.

surprisingly short: no longer than the end of the finger pads (as viewed side-on). The lengths of the fingernails of the lower hand are much less critical. The nail of the little finger of the upper hand must be kept as short as possible. The thumb-nails need to be fairly short, never much longer than the end of the thumb pads.[8]

Ideally, all the nails except those of the little fingers should be trimmed so that they are slightly pointed at the centre of each nail, and each nail should be trimmed back smoothly at its sides.

The necessity for all this will emerge from the detailed examination of individual movements below.

The adoption of this nail technique has practical consequences for the stringing of instruments. There may possibly be a style of attack using the nails which can be used on gut strings, but there is no attack that can realize these movements without quickly fraying gut strings to destruction.[9] This is not the case with horsehair, which is remarkably resilient, nor with metal, which tends to break occasionally at the pins or shoes but not where it is plucked. These limitations are discussed Part 2: INSTRUMENTS.

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[8] The references to the harpist's nails as 'sharp' in Middle English poetry may only be a poetic convenience as 'harp' and 'sharp' are rhyming partners. If they do indeed imply that the nails were noticeably long, it would need to be that a rather different finger action was being used from that appropriate here.

[9] This statement is based on several years of personal experience. The fraying begins almost immediately the string is used, with a loss of tone-quality and loudness which declines rapidly until the string breaks a few weeks later with full-time use. My conclusion is that it would always have been impractically uneconomic to use this nail technique on gut strings. The tone-quality of nails on gut without brays is very poor, incidentally.

III. THE TERMINOLOGY OF TECHNIQUE

When the various sources are collated, we are presented with what must be a fairly full inventory of terminology and nomenclature for performing technique, in an abundance that makes those of folk traditions look meagre in comparison. In addition to the names of fingering movements given on p. 35 we are fortunate to have the exposition of terminology in Pen. 147, p. 199:

Dowetter bellach am grychiadau

a fflethiaday

a chysylltiaday

a thagiaday

ag ystopiaday

llyma yr achosion y mae y cysylltiaday yn cael y henw

achos y bod yn cysylldy cywirdane a thyniaday

a llyma yr achos y cafas tagiad y henw oherwy*d* bod yn

ystopio cywir dant a thyniadau ryw amser pen *d*el mewn cer*d*

crychiadau sy*d* yn cyflowni rwng cywir dane a thyniaday

A lle y savo y bys y cyfrifir y tolciaday sy*d* yn gwsnaythu

yn lle bwadau ar plethiaday yn tegcay rwng tyniaday a

chowirdannay ag yn ymryfaylio bob un ay gily*d* ag yn

dosbarthy.

This passage can be translated as:

Let us talk further about *crychiadau*, and *plethiadau*, and

cysylltiadau and *tagiadau* and stoppings.

These are the reasons why the *cysylltiadau* have the name they

have: because they join/connect/attach *cyweirdannau* and *tyniadau*.

This is the reason why the *tagiad* had its name: because it stops

between *cyweirdannau* and *tyniadau* at some time when there

comes into a *cerdd krychiadau* which complete/fulfill/perfect

between *cyweirdannau* and *tyniadau*.

And where the finger stands, *tolciadau* are counted, which serve

instead of bowings.

And *plethiadau* beautify/refine between *tyniadau* and *cyweirdannau*

and each one quarrels with the other and falls into classes.

Pen. 62, p. 18 contains a similar passage:

Paham i cafas y Tagiad i enw? - Am i vod yn stopio rhwng Tynniad a chyweirdant.

Paham i kafas krychiad i henw? - Am i vod yn kyflowni kyweirdant a Thynniad.

Paham i kafas plethiad i enw? - Am i vod yn tekau rhwng cyweirdant a Thynniad.[10]

Cyweirdant, Tyniad and Cynnwys Dannau

It will be immediately noted that all the above terms are defined in reference to *cyweirdannau* and *tyniadau*, which themselves are not terms which are defined in any source that we have. The impression we have is that these two terms were so fundamental that they did not need to be defined, that they were understood or self-evident.

Yet without an understanding of them nearly every explanation of other terms has to be ultimately obscure to us. What is clear is that '*cyweirdant*' and '*tyniad*' were largely harmonic concepts, and so it is that in the above passages they are defining the terminology of fingering technique, which primarily relates to melody, in terms of harmony. Because of this we are forced to base our attempt at understanding melodic technique on such understanding as we have of the harmonic theory and practice of this tradition.

Therefore I need to stress the importance of the material covered in Part 3: TUNING, where the evidence for the harmonic theory is collated. I reiterate here some of the most relevant conclusions arrived at there.

It is probable that the contrasting terms '*cyweirdant*' and

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[10] Both these passages are provided by T. Gwyn Jones, but the largest collection of typescripts of relevant passages is provided by Miles.

'*tyniad*' originally arose from distinguishing between notes sounded on open and stopped strings: '*cyweir-*' in the sense of a string that is set on initial tuning, and '*tyniad*' in the sense of a drawn or stretched string, that is stopped on a fingerboard (or possibly once the yoke of a lyre).

Fundamental to the subsequent tradition was the systemization of the all-important relationships between *cyweirdant* notes and their *tyniad* counterparts into different categories termed *cyweiriau*. The relationships were unique in each *cywair*.

An additional sophistication was that in each *cywair* every note was classified according to whether it was fundamental or not to the basic harmony of the *cyweirdant* notes, and again in respect of the *tyniad* notes. If fundamental the note could be sustained, but if not then it would tend to be short (in fact damped on the harp), and replaced by one of the fundamental notes. The short notes were evidently termed *cynnwys dannau* (strings which were contained and/or possibly welcoming in the sense of introductory).

We lack the details of the theory of the system, but an understanding of the details of the fingering movements does enable us to implement the system. This short account of the theory provides the underlying basis upon which stereotyped melodic shapings give form to a harmonic concept which must have been similar to resolution, itself based upon concepts of consonance and dissonance.

Crychiad (a curling/a rumpling/a frizzling/a crepature/a wrinkling/a puckering/a ruffling/
a rippling/a shaking/a roughness)

The importance of this term is shown by these titles of pieces:

      kanniad krych ar gaink ofydd

      kanniad krych ar y carsi

      kanniad krych ar y bras gowair

      kanniad krych i hildir

      kanniad krych ar bragod gowair

      y cwlm crych ar golon

It is important to attempt to relate the technical terms given in the above passages to p. 35 and the music text, and for this it is clearly helpful to conceive the movements on p. 35 as divided operationally into two distinct groups: those which involve a movement on a single string and those which involve two or more strings.

In the first group are *krychu y fawd*, *ysgwyd y bys*, *plethiad y wahynen* and *cefn ewin*. These would logically appear to constitute the class termed *crychiadau* in the above passages. They occur most often in the music text between, not above chords in the lower part; they tend to appear as consonant with the chord below or before them in the lower part; often they sustain a note which a preceding movement has introduced, or they anticipate the first note of a following movement. In short, they appear to <u>fill up</u> or <u>fill in</u> between movements involving two or more strings which characteristically appear above thick chords in the lower part. This is reminiscent of the *crychiadau* described above which complete/fulfill or perfect between *cyweirdannau* and *tyniadau*.

<u>Plethiad</u> (a plaiting/a braiding/a wreathing/an interweaving)

The movements apart from *krychu y fawd*, *ysgwyd y bys*, *plethiad y wahynen* and *cefn ewin* I propose to broadly group together since

they involve more than one string. In logic they must be the group described as the *plethiadau* in the passages above, since they involve the 'plaiting' together of two or more strings, with damping to achieve harmonic 'hygiene'. In name they include five out of the six *plethiad* terms of p. 35. It seems that a distinction between generic terminology and specific nomenclature should be drawn: that these movements should be considered as constituting the *plethiad* generic group irrespective of whether the term '*plethiad*' occurs in the name of each specific movement in the group.

I suspect that too much has been made of the fact that we have '*krafiad*', '*tagiad*' and '*tafliad*' as well as '*plethiad* ' amongst the names here. For example, Ellis (1991) interprets two, and Polin one, of the three movements entitled *krafiad* as *glissandi*, implying that '*krafiad*' meant 'sliding', thereby contradicting the earlier work of Dart, Schaefer and Whittaker. Polin goes so far as to derive eight different categories of technique from the names. Yet we have no indication from p. 35 that such nomenclature was an orderly attempt to classify distinctions in the way in which movements were fingered.

I am not aware of any notices of *crychiadau* in music in contemporary poetry, but I have come across several notices of *plethiadau* :

> Plethiadau, ticiadau teg,
> Pur ddwyfol, peraidd ofeg.   Huw Ceiriog

> Ba ryw ddim a fai berach
> Plethiad no'i chwibaniad bach?   Dafydd ap Gwilym

> Llyma'r gainc ar y fainc fau
> O blith oed yn blethiadau   Dafydd ap Gwilym

Plethiadau'n plethu ydynt
Pithagras un gerddflas gynt   Gruffudd Hiraethog

Tra phêr dyniad tri phar dannau
Blith ydoedd dy blethiadau   quoted in Griffith p. 92.

Pob plethiad, pob tyniad tant
Pob cordiad, pob cyweirdant   Siôn Tudur

In addition to these quotes, we are informed that the *datgeiniaid* who were to accompany themselves needed to learn all the *plethiadau* / the warranted *plethiadau* (see Miles pp. 554-556). These notices are valuable in showing that *plethiadau* were a notable feature of music, that they were thought of mainly in the plural, and that they could be esteemed; also that '*plethiad*' could be used as a generic term, and that they had been warranted (? vouched in written form as in p. 35). But they give us no insight into the techniques by which they were produced.

It will become clear in the examination of individual movements below that they each involve damping, which must be identified with the *tagiadau* in the above passages.

Tagiad (a choking/a stifling/a strangling)

The dampings are used to stop notes that are apparently dissonant with the context of the lower part, which is what the passages above lead us to expect. A *tagiad* is, then, really an integral part of each of these *plethiad* movements.

The term is probably included in the title of a piece: 'can. y tigiadau'

Cysylltiad (a conjunction/a joining/a connection/an attachment).

This is evidently a contrasting term to '*tagiad*', which it

precedes in the exposition. It must be the term used to describe a string which is left open, undamped, to sound. Each of the *plethiadau* except *takiad dwbl* are resolved onto one to three such strings. A *plethiad*, then, is composed of a combination of *cysylltiadau* and *tagiadau*.

Tolciad (a lapsing/a hollowing/a punching/a driving in/a denting/a creasing/a dinging)

Tolciadau, which in the above passage involve the finger standing - this may be the stopping finger of the *crythor*? - must be lapses or pauses or rests to serve instead of bowings, and so do not seem to relate directly to any of the contents of p. 35.

Several other terms are mentioned in various sources which may be relevant to technique but are not mentioned on p. 35. The main source of these is the Statute in Pen.147, p. 147:

> Pencer*d* ney athro a *d*yly gwybod … ag a vyno dwyn ariandlws telyn neu
> grwth raid yw y*d*o wybod … a dosparthu pob gwahan a Ragwahan pob
> cynhwysiad a gorffwysfa, pob symydiad ar dyniad a chyweirdant …

(There is no equivalent passage in most copies of the Statute, such as B.L. 19711.)

Gwahan (a separation/a diversity/a difference/a distinction/a division/a parting) and rhagwahan (*rha-*: that which forces, or drives onwards/ertness/momentum)

These terms possibly refer to the dynamics of harmony which exist within the *plethiad* movements, in 'expansions' of chords in the lower part, and occasionally in the relationship between both parts (see 81.2.10-81.5.17). Principles that relate to suspension and resolution are detectable in these features, and '*rhagwahan*'

would be an apt term for a 'suspension' and '*gwahan*' for a 'resolution'.

Cynhwysiad (a springing together/a being elastic together/contents)

> Cannwyll oedd mewn cain wellhad
> Canasau bob cynhwysiad.   Wiliam Cynwal

> Cynhwysiad pob tyniad tant,
> Cordio ar bob cyweirdant;   Wiliam Cynwal

This may possibly be an alternative name for chord.

Gorffwysiad (a resting/a reposing/a pausing)

> Pob gorffwysiad, caniad cainc,
> Pupur hafgoed, pob prifgainc.   Wiliam Cynwal

This may be an alternative term for *tolciad*, possibly a musical pause. But as it is paired with *cynhwysiad* in the Statute as if the two were contrasting terms, they probably refer to the alternation of participation and resting by a musician for substantial metrical units. This is detailed in Part 7: REPERTORY, where it is argued that the *clymau ymryson* may have been alternating duets between harp and *crwth*.

Symudiad/Ysmudfa (a movement/an interruption/a removal)

> Bu yn gwybod deunod da
> Bwys modfedd bob ysmudfa;   Wiliam Cynwal

This appears to refer to the fingering movements, a category composed of *crychiadau* and *plethiadau*. A hierarchy of generic terms is emerging here:

symudiadau

/   \

crychiadau   plethiadau

/   \

cysylltiadau   tagiadau
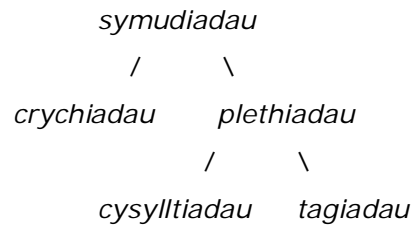
Two more terms are used (Morris, quoting S.D. Rhys on p. 113): '*cuddiedig*' and '*anghuddiedig*' in connection with '*ysmudfa*' - 'concealed' and 'unconcealed'; presumably these refer to covered and uncovered or damped and undamped notes: an alternative vocabulary to *tagiad* and *cysylltiad*.

Cnot (a knot)

Pob cnot ir, pob caniad teg,
Pwy bu gystal pob gosteg?   Siôn Tudur

A chnot teg na chaned dyn
Yn y dalaith un delyn.   Wiliam Cynwal

This may just mean chord, or it could be an alternative name for the *cwlwm* forms, or just possibly for the *plethiad* movements. In the first quote above the word occurs in the context of the *caniad* and *gosteg* forms, and this strongly suggests it is an alternative name for the *cwlwm* forms.

The text contains three terms which relate to performing technique which are not evidenced elsewhere: Gwrthwynebu, Fforchog and Chwith. These are discussed in passing below.

IV. THE UPPER HAND

The upper hand (*y llaw ucha*) is referred to in directions in the text, for example the note to 25.4, and it is clear throughout that the continuous horizontal line that divides the top part of each 'line' of tablature from the bottom part indicates the distinction between strings played by what is usually the upper hand and the lower.

Iconography generally reveals that the harp was played against the left shoulder, the upper hand being the left and the lower the right.(See Saer, pp. 9-12.) However in the text the consistent division is made not between left and right hand but between upper and lower hand. This strongly implies that it was not a rule that the harp was invariably played against the left shoulder. It seems that either this was a period of transition in which the left shoulder position was being abandoned, or that the position was a matter of personal preference - perhaps players who were naturally lefthanded played against the right shoulder.

There is musical significance to this. If the upper hand is the left hand, then the upper part would naturally tend to be played more softly than the lower, since it is the right hand which is usually the stronger of the two. From this it follows that if a righthanded performer were to play this music with the harp against the right shoulder, conscious effort would be needed to counteract a bias in volume towards the upper part.

Many of the columns of tablature have a movement symbol above the letter and octave marks which denote the strings to be played. By 'movement' here I mean those melodic shapings for many of which fingerings are supplied on p. 35. These probably equate with the term '*symudiad*' discussed

above. These will be discussed individually in the following chapter.

About 5,415 columns of text, slightly more than half of the total of 10,108, have no movement symbol in the top row of the tablature for the upper hand.[11] These are the points where single strings or chords are plucked, and where the tablature supplies no detail of the fingering and no detail of special technique. Very occasionally, as in the directions at 26.2, verbal directions in passing reveal the fingering.

It is notable then that the tablature is primarily a tablature of note-position on an instrument, not one of finger-position. The conclusion here is that there was a basic standard technique which did not require a fingering tablature, because the fingering was obvious or unimportant. Indeed there is no practical obstacle in deciding which digit to use in most instances of these single notes and chords, and where there is ambiguity we have no reason to suppose it matters which is used.

Never is the little finger required, as five-note chords are not used. Indeed chords never exceed three notes in the upper part.

Heavy use is made of the thumb, especially in chords, exploiting the spread between the thumb and the fingers. It is notable that the action with nail technique - a pulling off from the strings rather than the 'swiping' action of finger-tip technique, is most comfortable in chords if the thumb is used for the topmost string to balance the action of the fingers. Probably for this reason chords where the topmost string is too low to be comfortably reached by the thumb are rare. There are examples at 24.7.18 and following.

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[11] With such a large quantity of data some small margin of error should be allowed for in all counts.

Apart from this bias towards the use of the thumb the fingers are used in fairly equal proportions. All the chords lie comfortably within the reach of the hand. The widest chord, of two notes, spans 9 strings (62.2.8-9). Three-note chords often span 8 strings with the 4th or 5th string above the lowest. Apart from the term '*fforchog*' - forked - in the title of *Profiad Fforchog Ifan ab y Go*, which contains some of these wide chords, there is no indication that these chords had names (as are supplied by Bunting for harping in Ireland).

It is notable that the width of these chords is not so great as to dictate that they be spread in order to make them reachable. If they were arpeggiated, this has not been indicated in the tablature, as the letters for their strings are vertically aligned in single columns. Any argument for specific harping techniques that is based on subsequent harping practice in other traditions has to address the fact that this was music for stringed instruments in general, not idiomatic to the harp. Would *arpeggio*, *glissando* or *tremolo* effects be realisable on the *crwth* and *timpan*? And if not, would practice on the *telyn* diverge and include them? All this is unclear, and whilst it is so it has to be that positive evidence is required before any specific harp technique from elsewhere is ascribed to this music.

There is some evidence that the chords in the upper part were spread. Most of the movements, which constitute nearly half of the text, lead to single notes sounding alone in the upper part, (on Dart's interpretation of damping which is endorsed here), but some lead to two sounding together: *plethiad mawr*, some variants of *plethiad y bys bach* and *krafiad sengl*. The variant of *krafiad sengl* leads to a three-note chord. Of these,

plethiad mawr and *krafiad sengl* are illustrated on p. 35 in triangular notation, and in both of these the two notes of the chord are illustrated as staggered in what appears to be an ascending *arpeggio*.

So possibly this was a general feature of chords in the upper part. Put briefly here, this view is strengthened by considering the melodic and rhythmic balance of the pieces. Passages of movements are frequently interspersed with passages that lack them, and without spreading the chords in these the pieces are rather unbalanced - the chordal passages are rather bald in relation to the passages with movements. But this may be deliberate, to achieve a valued contrast and to draw attention to the chords. The issue is examined in detail in Part 6: RHYTHM (pp. 33-5, 108).

Nearly half the text contains the unique tablature symbols above the letters for the strings. Although progress has been made in translating these into the fingering movements they indicate, the literature falls far short of arriving at conclusions. Thus it is necessary to provide a detailed examination of these *crychiad* and *plethiad* movements to settle these issues. After this, the discussion of upper hand technique in general can be resumed.

V. MOVEMENTS

In the following sections on individual movements I propose to consolidate much of what has emerged from previous contributions to the subject of fingering technique, and to explore and develop the concept of covering-finger damping. This is a necessary advance as existing interpretations have fallen far short of identifying the damping fingers.

The movements will be presented in the order most suited to the thread of the arguments. A summary of the details of the movements is provided in the Appendix. Here I present a brief outline of the main arguments which will be given in detail in the following sections on those individual movements which are involved.

It is possible to consolidate in three areas, and to make advances in three more:

1) The order in which the strings are to be plucked. There has been consensus in respect of most of the movements. I shall discuss in detail those where there has been disagreement, in the examination of individual movements below.

2) The identification of the finger used to pluck each note. I endorse and adopt Schaefer's and Whittaker's scheme:

note-head	stem	
right	up	thumb
left	up	forefinger
left	down	middle finger
right	down	ring finger

and I summarize here the arguments for the scheme:

i.   It provides an explanation of the otherwise unaccounted for variety in the directions of the stems and note-heads. As

Dart realised, this does need to be accounted for.

ii. It assigns the thumb to *krychu y fawd* ('*fawd*' means thumb) and to a string in a variant of *plethiad y bys bach* upon which *krychu y fawd* is performed.

iii. It assigns digits to the pluckings so that no crossing-over of them occurs, i.e. the scheme is demonstrably practicable. This could hardly be due to chance, as there are in total twenty-eight movements in each of which just one crossing-over would be disastrous, yet in all of them there are none.

iv. It assigns all the digits except the little finger to a four-string movement - a variant of *krafiad sengl* - in the only way in which it is possible to play a four-string movement (it is not practicable that the little finger be used to pluck).

v. It assigns digits so that there is economy of movement of the fingers and of the hand both within each movement and between juxtaposed movements in the text. This is very much a matter of experience, but it will be illustrated by reference to a computer analysis of the juxtapositions.

3) The identification of the damping of certain notes.

I summarize the arguments for Dart's and Whittaker's scheme here, that the blocked note-heads indicate damped notes, and unblocked note-heads those left to sound:

i. The blocked note-heads refer to alphabetical letters which tend not to occur in the lower part of the columns they appear in the text, and the converse is the case with the unblocked note-heads. The implication here is that the harp was tuned with ascending strings in ascending pitch (an important point explored in Part 3: TUNING) and that the damped notes would therefore be dissonant. This is clear from an examination of any part of the text and does not need to be demonstrated here.

ii. The use of the word 'tagiad' amongst the names of the ornaments and in the exposition of technique in Peniarth 147.

iii. Only by assigning a damping function to the thumb and little finger in the movements named after them can these names be explained on Schaefer's and Whittaker's plucking scheme. We can have confidence in this as it would be very odd if not inconceivable that the little finger would be used to pluck.

4) The identification of the finger used to damp each damped note. Unlike the plucking fingers, these are not specified by any aspect of the triangular notation, so it is necessary to deduce them. It emerges that covering-finger damping is used, not same-finger damping. The arguments for this are summarised here:

i. Adopting Schaefer's and Whittaker's identification of the plucking fingers dictates that four of the movements on p. 35 involve covering-finger damping. These are:

1) *taked y fawd*, in which the thumb is not used to pluck, yet we know from the name of the movement that it is used to damp.

2) *plethiad y bys bach*, in which the little finger is not used to pluck, yet we know from the name of the movement that it is used, and this can only be that it is used to damp.

3) *plethiad dwbl*, in which a damped string is plucked a second time, by a different finger from that which first plucked the string. This would not be the case if same-finger damping was used.

4) *plethiad y pedwarbys*, in which again a damped string is plucked a second time, by a different finger from that which first plucked the string.

ii. These figures supply us with four incontrovertible points of entry into what is a system of covering-finger damping, for there is no evidence whatsoever for the alternative proposition - that same-finger damping was used.

iii. Covering-finger damping permits the movements to be played with a speed and an ease which are both unattainable from same-finger damping.

iv. Covering-finger damping is not unprecedented, since Bunting's descriptions and examples of fingering movements include examples of it. Also he gives the impression that he considered this to be at the heart of an ancient system of technique. From other links between early musical practice in Wales and Ireland we have some reason to expect similarities in fingering technique.

5) Variants on the standard fingering movements have on the whole not been examined and interpreted by commentators, and in some cases they may have lain undetected.[12]

6) Quantification and location of the distributions of the movements and their juxtapositioning in the text. The results are summarised in the Appendix, and enable many of the parameters of the music to be defined for comparative work.

Here follows a detailed examination of the individual movements, presented in the order that makes the threads of the above arguments clearest, beginning with the *crychiadau*. The

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[12] This may seem surprising to the reader, but both Whittaker's and Polin's transcriptions of the entire text only partially interpret it; prudently, they are both expressly non-committal on key features and rely partly on transliterations of tablature symbols rather than definitive translations of them into modern musical notation. It is important that these transcriptions are not mistaken for full translations into music.

conclusions regarding the distributions, fingerings and scopes of the movements are summarised in the Appendix, and it might be helpful to refer to this whilst reading the following. The conclusions are firm enough to permit the emendation of the text in some places, and the emendations are listed in the Appendix.

KRYCHU Y FAWD

In the upper part there are 301 instances of this movement. (A further 22 instances of its symbol are used in conjunction with the symbols for *plethiad y bys bach* to indicate a variant of that movement, discussed below.) In the lower part there are 44 instances.

This is one of the four movements on p. 35 which are classified here as *crychiadau* because they each involve just a single string rather than the two or more of the *plethiadau*. Robert ap Huw writes the movement out more than once in triangular notation, as he does with many of the movements. In this case he gives three quotes. This has instantly led to confusion over the number of notes involved. Morris, Dolmetsch, Travis and Schaefer presume three, prompted probably by a misunderstanding of the triangular notation. Whittaker is wisely non-committal. Ellis (1973) suggests *tremolando* where the number varies - either four, six or eight according to the skill and virtuosity of the player, and (1991) three also. Polin opts for a trill of sixteen.

The symbol for the movement is obviously a pictograph of the backward and forward striking of a single string. The number of strikes represented on p. 35 is five, but in the text the number varies with an inconsistency which precludes accepting the pictographs as a guide to the number of strikes (compare 80.5.5 with 80.5.14 for example).

In the text the movement is usually adjacent to, and most commonly precedes, chords, single notes and movements that involve the same string as this thumb *crychiad*, and they too must be partly produced by the thumb to be swift and comfortable. This

raises the possibility that the movement is not itself made up of repeated strikes, but that in <u>combination</u> with adjacent movements it results in repeated strikes. In the majority of cases, if the movement itself was no longer than a single strike with the back of the thumbnail the pictographs would still be apt descriptions of what takes place in a context of thumb action: the principle of back-and-forth action.

There are 109 instances of the movement being both preceded and followed by the same note. There are 13 instances of pairs of the movement in succession on the same note (36.3.2 f). There are 38 instances of the movement being followed by the same note (45.4.1 f), and 19 instances of it being preceded by the same note (18.1.14 f). In each of these just a single strike by the back of the thumbnail for *krychu y fawd* would result in a total of two or more strikes on the same string

In the remaining 122 instances where the movement is <u>not</u> adjacent to the same note, there must be at least two strikes in the movement itself to justify the pictograph. Where these occur above chords in either the upper or lower part then the forward strike would need to coincide with the chord to be comfortable, but it is not clear if the other strike, if indeed there is just one other, would come before or after.

On p. 35 there are horizontal bars through the stems of the triangular notes of this and other movements. Perhaps these indicate strikes back-and-forth. There are groups of two and three of these bars in this and the *ysgwyd y bys* movement, but this still does not lead to a simple conclusion about the number of strikes in the movement itself.

It may be that these bars indicate note-duration, in which case the movement would comprise just a single strike.

A third possibility exists. If the bars are repeat marks for notes then eight or sixteen would be indicated, but as discussed in Part 6: RHYTHM, ornaments of such length would absolutely preclude any possibility of measured metrical units with any balance in their note-density.

Another (less correct) way of saying this is that realistically there is just not enough room for long ornaments. If this movement and the other *crychiadau* are interpreted as merely a single strike with the back of the nail then it is possible to derive bars which are just about sufficiently compact to be musically viable in our terms of reference. This is one reason why I adopt this interpretation. This has the advantage of good method in that as the number of strikes cannot be settled, it is best to assume the minimum (on the principle that it is better to err on the side of simplicity, if error there must be).

The figure occurs in the text on strings which could not be played on any digit except that referred to in the name '*krychu y fawd*': the thumb (*y fawd*), and an example of this is expressly confirmed by the directions at 25.6. Dart, Schaefer and Whittaker take the aspects of the triangular notation here - stem up, note-head right - to indicate the thumb throughout the movements. (Whittaker reasonably dismisses the double note-head on the first of the three quotes as a scribal error.)

In the 179 cases where the movement is adjacent to the same note, it will be that these adjacent notes are plucked by the thumb. Often they occur in *plethiadau*, and in the case of each *plethiad* movement the position of this plucked string relative to other plucked strings is constant. It is also always the highest string of each *plethiad* movement. This means that the thumb has

consistently to be the digit that plucks this string, which gives the opportunity to confirm Schaefer's and Whittaker's scheme.

An example is a variant of *plethiad y bys bach*, where in all of the 25 instances of the *plethiad* being immediately followed by *krychu y fawd*, the two movements share the same string - the highest of the strings involved in the *plethiad* (18.1.14 f). The scheme assigns the thumb to this string in the *plethiad*, and here this is confirmed as correct.

At 36.2.16, from the context, it appears that the symbol for *plethiad y wahynen* has been mistakenly written for *krychu y fawd*.

YSGWYD Y BYS

There are 154 instances of this movement; the 'shake /sway /flutter /wag of the finger'.

For this movement also, Robert ap Huw provides three quotes. Here the third is on the string above that of the first two quotes. The commentators prior to Dart have mistakenly read these as <u>one</u> quote, creating a rising figure. (This is in contradiction to the logic of the tablature for the other movements, where all the strings involved in a movement are identified by their alphabetical symbols. For *ysgwyd y bys* only one string is indicated.) Dolmetsch specifies a rising *glissando* by the forefinger.

Dart suggests six strikes on one string, back-and-forth by the forefinger. He identifies the movement with Bunting's *crothachaon mhear*, a movement executed in the same way with twelve or sixteen strikes. Schaefer concludes from his scheme of interpreting the triangular notation that the figure is indicated as playable by the forefinger, middle finger or ring finger, and that it has three strikes. Whittaker concludes the same except that he is noncommittal in the number of strikes. Ellis (1991) has four strikes with the forefinger. Polin opts for sixteen.

As with *krychu y fawd* this movement characteristically occurs in the text in contexts where the <u>same</u> string is plucked. So again it may be that the tablature symbol, which is another pictograph of back-and-forth movement, often describes no more than one strike, with the back of the nail, in a context of <u>other</u> plucks of the string.

Regarding the fingering of the figure, three quotes are supplied, of the forefinger, middle finger and ring finger

according to the scheme of Schaefer and Whittaker. This is odd since generally it appears that each movement has only one fingering, and this begs the question: is this movement (with its single name and single tablature symbol) indeed three different movements, or is the triangular notation muddled?

As ever, the text is the best area in which to seek clarification. The movement does occur lower than *krychu y fawd*, as we would expect of a finger movement, but not in very low contexts. There are 5 instances of it preceding a variant of *krafiad sengl* in a low position, but the *ysgwyd y bys* symbols (73.4.1 to 74.4.1) are probably erroneous, as they are superceded in quotes of the same passage by 'Z' from 74.5.8 onwards, and 'Z' is used in this position throughout the remainder of the text.

Apart from this group, all the instances of the movement are most conveniently played by the forefinger, and in many it would not be practicable to use either the middle finger or the ring finger. For example there are 16 instances where *ysgwyd y bys* is performed on a string which is the highest string of a following chord (40.3.4 f). In 15 of these the chord spans five strings, and as this cannot be reached between middle finger and ring finger, the highest string has to be played by the forefinger (not the thumb otherwise *krychu y fawd* would be written). A backstrike preceding such a chord by either the middle finger or ring finger is inconceivable.

Thus it seems that the first quote in triangular notation is correct, indicating the forefinger. The presence of the two 'extra' quotes here can be accounted for by attributing them to two other *crychiad* movements: *plethiad y wahynen* and the 'Z' movement as explained below.

Ysgwyd y bys is mainly used as an introduction or preface,

mainly to *plethiadau* in set relationships which make it clear that such concatenations of two movements should be considered as single melodic figures. The details of these set relationships are discussed under the separate headings of the *plethiadau* below, and in each case the relationships enable the plucking scheme to be confirmed.

PLETHIAD Y WAHYNEN

There are 563 instances of this movement in the text. Despite the word '*plethiad*' in the name, this movement is indicated as involving only <u>one</u> string, and the symbol for it has a similar appearance to that for *krychu y fawd* and *ysgwyd y bys* in that it is a vertical column of repeated elements (in this case semicircles adjoining a bar to the left). Accordingly, it should be classified as what is identified above as the *crychiad* group.

 '*Wahynen*' has what is probably a 'n' inserted before its 'h', almost certainly not by Robert ap Huw. It is reasonable to conclude, as all commentators have done, that the word indicated here is '*wenynen*' from '*gwenynen*' : 'bee'. This recalls the description by Andrew Borde of the performance of poetry/song accompanied by the harp. A buzzing sound is implied.

To the right of this movement on p. 35, Robert ap Huw has not supplied triangular notation. Instead he has supplied two quotes of a 'Z' symbol which is itself used in the tablature. This is odd since the three-line stave is otherwise reserved for triangular notation. This 'Z' symbol, as with the tablature symbols for *krychu y fawd* and *ysgwyd y bys*, is again clearly a pictograph of a back-and-forth movement. And so is the symbol for *plethiad y wahynen*. There tend to be four of the semicircles, but the number does vary in a way which is not systematic and is not according to circumstances, but is haphazard. Like the symbol for *krychu y fawd* it gives no clear indication of the number of strikes.

Commentators have suggested various numbers of strikes. Dolmetsch's interpretation is that the number varies according to circumstances. Crossley-Holland transcribes three notes; Travis

four; Dart thirty-two (in practice a buzz effect with the nail held lightly against the string); Schaefer one. Ellis (1991) suggests three or four using three fingers in conjunction, or three fingers and the thumb. Polin suggests four using both thumbs, although almost invariably the thumbs are occupied in different parts.

As with all the *crychiadau*, this movement characteristically occurs in the text in contexts where the same string is plucked. So again it may be that the tablature symbol often describes no more than one strike, with the back of the nail, in a context of <u>other</u> plucks of the same string.

It is frustrating that the finger that performs this movement is not specified in triangular notation on the stave on p. 35, to the right of the tablature notation. The 'Z' symbol supplied here instead is a tablature symbol in its own right, and no immediate explanation of this symbol is offered. We have, then, <u>two</u> tablature symbols with <u>no</u> triangular notation.

Interestingly, the movement *ysgwyd y bys* two lines below has three notations, each on a different finger (the stems and note-heads are in different directions). As discussed above, this is odd as for the other movements <u>one</u> fingering is given (apart from a bungle or two). It seems that there may have been a bungle here, and that the two 'extra' fingerings opposite *ysgwyd y bys* should have been matched to the two tablature symbols which have not had fingerings allocated to them.

Looking now at the contexts in which *plethiad y wahynen* is used in the text, the overwhelming fact is that there are absolutely consistent patterns. The movement was used in a highly systematic way, and it will have had a consistent fingering. On

the example of *krychu y fawd*, which is also used in consistent patterns, the movement <u>will</u> involve a single finger.

It is necessary to deduce the finger from the text. At 54.7.6, 80.4.9 and 81.1.9 it is followed by a chord on the same string and the string five above. Such an interval is most comfortably played between middle finger and thumb, because of the width of the chord. A preceding strike with the back of the nail of the middle finger is most comfortable here because the middle finger has a natural strength in backwards movement unmatched by the other fingers.

This identification of the middle finger is entirely practicable throughout the text, which is densely saturated with the movement, because the movement always occurs in a low context. The high frequency of instances shows that it was a favourite and comfortable movement, and this is what one should expect to follow from the strength and prominence of the middle finger. Often extra strength and control can be conveniently achieved by closing the middle, ring and little fingers together; this gives support to the middle finger.

It seems then that the first of the 'extra' quotes of notation opposite *ysgwyd y bys* relates to *plethiad y wahynen*, for on Schaefer's and Whittaker's scheme this quote (note-head left, stem down) relates to the middle finger.

The movement is used almost exclusively as an introduction or preface, mainly to *plethiadau* in set relationships. The details of these set relationships are discussed under the separate headings of the *plethiadau* below, and in each case the relationships enable the plucking scheme to be confirmed.

'Z' MOVEMENT

This symbol is used 36 times in the text (of which 8 are in the lower part), always above the letter for a single string. In two areas of the text there seems to be confusion with the symbol for *ysgwyd y bys*. 8 instances are on a figure at 59.1, related to that at 57.5 where *ysgwyd y bys* is used instead. 14 instances are before the variant of *krafiad sengl*, where prior to the first case of this at 74.5.8 there are 6 instances of *ysgwyd y bys* being used in this position instead.

Considering the similarity between these two symbols, it is not surprising that there may have been copyist's errors between the two. In the first area, on balance it probably should be that *ysgwyd y bys* should be used throughout. In the second area it will be that 'Z' should be used throughout, since the sequence: 5 *ysgwyd y bys* symbols (from 73.4.1 to 74.4.1) in a short section of text, quickly followed by 14 'Z' symbols thereafter in the same context shows that the scribe was getting into his stride - a common enough feature of the text.

The string on which the movement is performed is generally in a low context (20.2.1 f), which is in accord with the interpretation that the movement is a *crychiad* of the ring finger. But there is quite a lot of variety in the contexts in which it is used, giving a vague impression the symbol may have been used as a 'catch-all' for a miscellany of *crychiadau*. Notwithstanding the flexibility or inconsistency in its use, as the symbol appears to usually indicate a *crychiad* by the ring finger, it is safest to conclude that it was originally designed for this purpose. This would account for the second 'extra' quote of triangular notation against *ysgwyd y bys* examined above, to

the <u>right</u> of the quote assigned to *plethiad y wahynen* as the 'Z' symbol is also to the <u>right</u> of the *plethiad y wahynen* symbol.

Apart from those that precede the *krafiad* movements (which are all on the string which is the <u>lowest</u> string of the following movement), the movement is not usually adjacent to pluckings of the same string. So the logic of the pictograph dictates that there must have been at least two strikes in these instances since here a second is not provided by the context. This includes 6 isolated instances which are above a chord in the lower part (e.g. 20.2.1, 93.3.13).

KEFN EWIN

There are 72 instances of this movement in the text. It is denoted by '|' above the letter for a single string in the tablature. The name translates unambiguously as 'back of nail'.

Three quotes of this movement are provided in the triangular notation, on one string. Each note-head has a short vertical bar. The tablature symbol is a short vertical bar.

As with the other *crychiadau*, there is disagreement over the number of strikes. Dolmetsch has multiples of three; Crossley-Holland, Travis and Dart have three (Dart indicates the forefinger); Schaefer has one (forefinger or middle finger); Polin also has one. Indeed there is no evidence for more than one strike, and the single bar of the tablature symbol itself strongly suggests just a single strike. Perhaps this is the meaning of the vertical bars through the triangular note-heads.

On Schaefer's and Whittaker's scheme the quotes of this movement on p. 35 are of the forefinger, the middle finger and another of the forefinger. This seems rather vague. The picture is further complicated by the contexts the movement is used in the text.

Some occurrences are in contexts that dictate that the thumb is used for the movement. For example, those at 17.1.4 to 17.4.18 (at which the symbol will have been omitted) are bounded by movements on lower strings, with the result that the thumb is most conveniently placed for the movement itself; there would be no advantage in using the forefinger here. In contrast, those occurrences at 21.2.1 to 21.6.22 are in a low context, where the middle finger is the most convenient. It must be, then, that the symbol does not specify the digit to be used. This is entirely

unlike all the other *crychiad* symbols.

In all except 6 instances the movement follows a pluck of the same string, so there can be no doubt that the reason a backstrike, not a pluck, is used here is because it follows on soon after a pluck by the same digit. *Krychu y fawd* aside, this situation is the reverse of the other *crychiadau* played by the fingers, where the tendency is for the *crychiad* to be related to a <u>following</u> movement, not a preceding one.

For example, the movement *krafiad dwbl* does <u>not</u> occur in connection with a <u>following</u> *ysgwyd y bys*, *plethiad y wahynen* or 'Z' movement. This is remarkable considering the frequencies of these movements, and that *krafiad dwbl* <u>does</u> occur in a set relationship to a <u>preceding</u> 'Z' movement. Now there are 3 instances, each in different pieces, of *krafiad dwbl* <u>followed</u> by *kefn ewin*, and in each the *kefn ewin* is on the <u>lowest</u> string of the *krafiad dwbl* (57.5.2, 62.5.5, 88.5.5).

This may be why a separate *kefn ewin* symbol was devised for backstrikes in these positions. It may indicate what must be a difference in timing between *crychiadau* which attach to preceding movements and those which attach to following movements.

In the 6 instances where *kefn ewin* does not follow a pluck of the same string, it is hard to account for the use of a backstrike. 4 instances are in an overlapping-hands figure at 69.5.9 to 69.6.5, and the others are at 72.2.3 and 77.1.21. Perhaps the relative softness of notes produced by the backstrike action was valued for its own sake and was felt to be important in these particular places.

At 62.6.14 the context suggests the symbol should be in the preceding column.

This completes the discussion of the five *crychiad* movements, each on a single string, and one for each plucking digit with *kefn ewin* evidently not specifying a particular digit. They all appear to indicate just one musical figuration - essentially a backstrike - and the different ways in which it was produced. The following movements are *plethiadau* on two or more strings, and usually describe different musical figurations.

TAKED Y FAWD

There are 1,179 instances of this movement in the text. This is the highest total of any of the movements. It is itself one of the fundamental rudiments out of which other, longer *plethiadau* are built.

The movement involves two strings as indicated by the two letters below the '\' symbol. Although quoted on p. 35 as being on adjacent strings, 178 instances are not on adjacent strings (24.5.3 f), and can be as wide apart as one four strings below the other (50.2.4 f).

All commentators including Lewis Morris have been agreed that this movement involves the plucking of two strings beginning with the higher of the two. This sequence of playing the strings is the simple conclusion to be drawn from p. 35: the symbol of a diagonal stroke <u>falling</u> as one reads from left to right:- '\'; and this is echoed by each of the three pairs of triangular notes on the stave written to the right.

There is one disparity in interpretation here which applies to nearly all the movements, which needs to be finally resolved. Dolmetsch stated that some movements can be doubled where suitable, and Travis in particular puts this into practice. Probably Dolmetsch formed this impression from the triangular notation, which in the case of this movement, for example, provides three pairs of notes following the tablature symbols, not the <u>one</u> pair that the tablature would lead us to expect. For most other movements the triangular notation provides two sets of notes, not three, and the second set duplicates the first. But in *taked y fawd* the second and third sets are not duplicates of the first, they are raised one string. With such inconsistencies in

the triangular notation it has to be unwise to conclude that the movements were doubled, either sometimes or always.

Most interpreters have been agreed that the triangular notation simply provides two or three quotes of what was in each case a single movement, and this is the simplest and safest conclusion. It is borne out by the text: often movements are repeated in tablature; an example is in the first *cainc* of 'Gosteg Dafydd Athro'(15.1), and for the tenth *cainc* the instruction is to double this movement ('... ond dyblu plethiad y pedwarbys ...'17.7). It seems then that when a movement is to be doubled, the text has no difficulty in indicating it. Also, putting it briefly here, a doubling of movements throughout the text would unbalance the music to a ridiculous degree; for passages with movements often alternate with passages which are bare of them, and if metrical units are to be maintained then very crowded passages would alternate with incredibly sparse passages (e.g. 36.4.1-16 contrasted with 36.4.17-24).

One has to wonder if Dolmetsch's proposal arose out of a desire to complicate the music, to shape it more into line with our modern experience of Baroque music. We have already seen in connection with the *crychiadau* that interpreters have tended to opt for unnecessarily complex interpretations.

Turning back to the *taked y fawd* movement in particular now, the term gives information on technique. Nearly all the terms for the movements are, fortunately, operational and concern fingering (as do Bunting's terms for harp-playing). This term translates as 'a tacking of the thumb', where the English word 'tack' appears to have been borrowed. But this is the only instance of '*taked*' in a musical context, and it seems that the word is very probably actually a corruption of '*tagiad*': a choking, a stifling, a

strangling. On p. 35 are movements termed '*tagiad dwbl*' and '*takiad fforchog*', and whereas we have an explanation of the meaning of '*tagiad*' in Pen. 147, we have no mention there of '*taked*' or '*takiad*'. Schaefer, Whittaker and others take '*taked*' as '*tagiad*'.

The implication, then, is that the thumb is used for damping in this movement. Dart suggests the fingering: thumb plucks higher string, and then damps this string as forefinger plucks lower string. (As the thumb plucks the string it damps, this proposal is an example of what I term same-finger damping.) The plucking fingers here are the same as those given by Dolmetsch but are also according to Dart's interpretation of the scheme of the triangular notes:

note-head	stem	
left	up	thumb
left	down	forefinger
right	up	middle finger
right	down	ring finger

Whittaker criticises this scheme as completely impractical for many of the movements, without going into detail. In practice, this <u>particular</u> movement is quite feasible when played according to Dart's suggestions, with one very important restriction: the speed at which it can be played is severely limited by the need for the thumb to return to the string it plucked.

For it is a simple fact that the two motions - plucking and returning to the plucked string - cannot be performed almost instantaneously in the way in which two strings can be plucked by

separate fingers (as in an *arpeggio*). In this movement the two strings could be plucked very closely together were it not that the second pluck has to wait until the thumb can damp the first string. This thumb action takes fractionally longer than one might expect because the thumb does not have to simply move away from the string and back to it; it has to actually describe a small circle to avoid the thumbnail snarling the string on its return (the fleshy pad of the thumb has to be used to damp, not the thumbnail). The result is an audible difference in speed between playing this movement with and without the thumb damping in the way Dart proposes.

It may be thought that this difference in speed is unimportant, but at this point I want to emphasize that practically effective and simple solutions should be preferred to cumbersome and complex ones wherever a choice arises, as a matter of correct methodology. Not only would it be rather disappointing if the fingering technique prohibited very rapid playing; it would be unsettling to levels of confidence in interpretation. So at this point it is important to note that an interpretation using same-finger damping results in a style which is significantly slower than the styles of harp-playing we are accustomed to, and that it would be preferable if an alternative interpretation were available which overcame this limitation.

Schaefer and Whittaker both propose a different interpretive scheme of the triangular notation:

note-head	stem	
right	up	thumb
left	up	forefinger
left	down	middle finger
right	down	ring finger

Whittaker's interpretation of *taked y fawd* is: forefinger (not thumb) plucks higher string, and then thumb damps this string as middle finger (not forefinger) plucks lower string. This is an example of covering-finger damping - the first string is not damped by the finger that struck it, but by <u>another</u> digit: the thumb. The limitation on speed is removed by this, as the thumb is free to hover in the right position just above the first string even before the first string is struck. The thumb can virtually instantaneously damp it, and so the normal speed of fast arpeggiation can be achieved for the movement.

This is an impressive damping technique. Its success depends upon preparation: the placing of <u>both</u> the plucking fingers on their strings at the outset of the movement, as for an *arpeggio*.

Schaefer's interpretation of *taked y fawd* is more complex. The fingering is the same except that a *staccato* note is produced on the first string, which is to say that the pluck of the second string is delayed to allow for a tiny pause after the damping of the first string. This reduces the speed the movement can be played at again. This should not worry us as the effect could be impressively *staccatissimo*, were it not for the fact that he does not argue the point. Again, as a matter of method, we have to have good reason to reject the more complex alternative: artistic complexity is not sufficient reason to adopt complicated solutions, and we need to guard against giving priority to the

need to promote the subject.

Having used the same fingering as that proposed by Whittaker for all the instances of *taked y fawd* in the text, I fully endorse this fingering of it. There is of course no problem in rapidly plucking two adjacent strings with adjacent fingers, and in the small minority of cases where the strings are not adjacent these two fingers can comfortably reach the strings. But more than this the movement is always positioned in the text in a context where these two fingers and the thumb are comfortably available. No sudden large shift of hand-position is required to prepare for the movement, nor does it result in any large shift to play what follows. In particular, it should be noted that often the harmony of the melodic line of the upper hand is very wide in a way that exploits the spread that is possible between the fingers and the thumb. *Taked y fawd* commits the thumb to the low level of the fingers, and so if the movement occurred in the midst of one of these wide passages there would be a problem in getting the thumb down from and back up to the higher strings. Significantly the movement does not occur in these contexts (*hanner krafiad* is used as a 'substitute').

The damping of the first string in this simple movement gives us a starting-point in the establishment of important principles which apply to all the *plethiadau*:

1) covering-finger damping is available and it is essential for speed.

2) damped notes do not usually sound simple intervals with the string(s) left sounding.

3) the identity of damping digits is consistent in all instances of a movement.

4) damping digits can give rise to the name of the movement.

5) damped notes begin movements.

6) damped notes are indicated by blocked triangular note-heads, <u>and</u> by the number of diagonal strokes in the tablature symbols (in this case, one).

These principles will be developed as we proceed.

The main juxtaposition of *taked y fawd* is with *plethiad y wahynen*. There are 174 instances of *plethiad y wahynen* prefacing *taked y fawd* (38.1.2 f), and in every single instance the string of *plethiad y wahynen* is the <u>same</u> as the lower string of *taked y fawd*. This is confirmation of the fingering of *taked y fawd*, for the hand position will remain fixed and no fingers switch strings. Any other relationship between the two movements would not be rapidly practicable. The complete sequence will be: middle finger strikes lower string with back of the nail, then forefinger plucks upper string whilst middle finger is in position to pluck lower string, then middle finger plucks lower string whilst thumb damps upper string.

Taked y fawd occurs in the text in another format in conjunction with the movement *y plethiad byr*, discussed in the section on *y plethiad byr* below.

The triangular notation for *taked y fawd*, in its stems and the blocking of the first note-head, is identical to parts or components of several other movements (*tagiad dwbl*, *krafiad dwbl*, *plethiad dwbl* and *tafliad y bys*), and it has a close resemblance to another movement (*takiad fforchog*). It is possible, therefore, to extrapolate from *taked y fawd* to these other movements. In fact more than this, it is essential method to make these extrapolations because all the movements are part of a standardised, unified system of fingering. As much consistency as

possible must be kept between each of the movements, else not only does the method become flawed, the movements become unnecessarily difficult to acquire on the fingers.

From the context, it appears that the symbol for *plethiad y pedwarbys* has been mistakenly written for *taked y fawd* at 52.2.21 and 54.7.18 (compare 66.1.12, 72.6.8, 76.5.7, 85.3.5, 91.2.3).

There are some special instances of the '\' symbol above just a single letter, which are discussed in the section below on *y plethiad byr* because they tend to occur in connection with that movement.

Before proceeding to the other movements, it is worth reflecting on the significance of what has unambiguously emerged from considering this *taked y fawd* movement. If indeed the harp was tuned so that ascending strings were tuned to ascending notes (as argued in Part 3: TUNING), then there would be nothing unusual from our perspective about two adjacent notes being played in succession, the higher followed by the lower. It could be that the movement was an ornament, for example a backfall (descending appoggiatura) as suggested by Dolmetsch, or just a drop in the melodic line to an adjacent note. Either way we are presented by no problems in accepting the need for this kind of shaping to melody.

It is interesting that the fingering of this melodic shape is prescribed, not left up to the discretion of the performer, and that it is named. This suggests that the tradition was idiomatic, and that this was a fairly precise, perhaps strict idiom.

The covering-finger damping is interesting because it relates to Bunting's description of Hempson's style (1840, p. 73):

> … an admirable method of playing staccato and legato, in which he could run through rapid divisions in an astonishing style. His fingers lay over the strings in such a manner that when he struck them with one finger, <u>the other</u> was instantly ready to stop the vibration; so the staccato passages were heard in full perfection. [my emphasis]

Bunting's examples of graces, except for the *glissandi*, are not marked *staccato*, so it is not really clear whether he was using 'staccato' here in the normal strict sense of 'detached' or in the sense of 'damped'. Either way, this is a description of covering-finger damping.

The temptation is to use Bunting's examples of graces as a key to p. 35 of the MS., because at least they are written in modern notation. Several commentators have drawn attention to the possible relevance of Bunting's graces, notably Dart who identified *taked y fawd*, for example, with Bunting's *brisidh*. The identification does not hold in Schaefer's and Whittaker's scheme of the fingering. It seems here that Dart was led into his impracticable scheme by following Bunting. Nevertheless, there is a clear correspondence in the <u>principle</u> of covering-finger damping, so as we progress through the other movements it is important to be alert to the possibility of the p. 35 movements having counterparts in Bunting.

TAGIAD DWBL

There are 84 instances of this movement in the text. It is indicated by '\\' above the letters for two adjacent strings.

Travis transcribes this as four notes, probably because two quotes are supplied in the triangular notation. The movement is written in triangular notation the same as *taked y fawd* except the second of the pair of notes is blocked. From this we can deduce that the plucking fingers are the same as for *taked y fawd*. Curiously, Dart has departed from his scheme on this one and interpreted the fingers as the middle and the ring fingers. This is an example of the inconsistencies Whittaker criticises Dart on, where clearly Dart prefers to follow Bunting's *leath leaguidh* rather than his own scheme.

On Schaefer's and Whittaker's scheme the plucking fingers are again the forefinger and the middle finger. One has no reason to suppose that the damping of the first string is not by the thumb again, for in the text the thumb is available in every instance, as it is for *taked y fawd*.

The blocking of the second triangular note of the pair indicates that the second note is also damped. As this is coincident with the <u>two</u> diagonal strokes in the tablature symbol, we can deduce that the number of strokes denotes the number of strings damped.

Schaefer, Polin and Ellis (1991) interpret the movement as a double *staccato*, the two notes being detached from one another. There is no evidence for the detachment, however, and as this would make the movement rather long in execution (even with covering-finger damping) it has to be rejected.

By which finger is the second note damped? The thumb has

recently come to rest on the first, upper string. On the example of *taked y fawd* we should not expect the damping finger to be the same finger that plucked the string to be damped - in this case the middle finger - as that would be cumbersome. The little finger is very unlikely because it gives its name to another movement (*plethiad y bys bach*), and because it is not naturally hovering over this string. Both the remaining two fingers, the forefinger and the ring finger, are comfortably available. The forefinger is available because the pluck of the upper string is not immediately before the damping of the lower string, but immediately before the pluck of the lower string (in other words two steps in time before the pluck, not just one).

The final choice between the two fingers is arrived at by considering the main juxtaposition of this movement. In 77 instances of the total of 84, the movement is immediately followed by a single pluck of the string below the lower string of the movement. The position of this extra string dictates that it will be plucked by the ring finger, which would not be possible if that finger had just damped the second string of *tagiad dwbl.* So it has to be the forefinger that damps the second string.

Another significant juxtaposition is *ysgwyd y bys* prefacing *tagiad dwbl* (58.6.11). Since *ysgwyd y bys* is always on the higher string of *tagiad dwbl*, it will be that here this string is struck with the back of the nail of the forefinger, which is then in place for plucking it at the beginning of the *plethiad*. Thus the plucking scheme is again confirmed: here and in *taked y fawd* the forefinger does indeed begin the movement.

The movement is then: forefinger plucks upper string, which is damped by thumb as middle finger plucks lower string, which is

damped by forefinger.

Unlike *taked y fawd* and the other most commonly used movements, it is notable that this movement tends to be confined to particular sections of the pieces in which it is used. For sections are often differentiated from one another by the introduction and abandonment of particular movements, each successive movement substituting for its predecessor in the same positions within successive sections. In this sense the movements are clearly <u>structural</u>, and not ornamental in the strict sense of the word. It is notable that fingering movements are used in this way in *piobaireachd* as well.

It is also particularly noticeable with this movement that it is confined to particular pieces, and this is the case with many of the movements. Again this is the case in *piobaireachd* (see Campbell pp. 14-19, Cooke pp. 18-27), and it may be that the presence or absence of a movement in a piece has significance in identifying the appropriate mode of expression of a piece; this is explored in Part 9: EXPRESSION.

KRAFIAD DWBL

There are 71 instances of this movement in the text. It can be translated as a double scratching/scraping/scoring. It is indicated by '\\' above the letters for three adjacent strings. Ellis (1991) interprets '*krafiad*' as '*glissando*', performed here by the forefinger or middle finger. This does not account for the inconsistencies in the stems and note-heads of the triangular notation.

In the triangular notation this is the same as *tagiad dwbl* with the addition of the next string below as a third pluck, which is indicated to be performed, according to Schaefer's and Whittaker's scheme, by the ring finger. P. 35 has left no room for disagreement over the order of plucking the strings here.

It remains to deduce the damping fingers. On the example of *taked y fawd* the thumb must again be taken to damp the first, upper string, and as with *tagiad dwbl* this again precludes the thumb from damping the second, middle string. Also precluded is the middle finger which struck this string. And also precluded is the ring finger, which here is in the process of plucking the third, lowest string. By elimination the answer has to be the forefinger. This is perfectly comfortable and effective.

The movement is, therefore, fingered the same as the 92% of instances of *tagiad dwbl*, where it is followed by a pluck of the string below (discussed above). As *krafiad dwbl* spans one column and the extended *tagiad dwbl* spans two it will be that the second and third notes are detached in the latter movement. This is confirmation that damping generally does not result in *staccato*, that it is a special feature of *tagiad dwbl*.

An important juxtaposition here from the point of view of

fingering is with the 'Z' movement. There are 3 instances of *krafiad dwbl* which are prefaced by the 'Z' movement, and in each the string on which the 'Z' movement is performed is the same as the <u>lowest</u> one of the *krafiad dwbl* (90.4.13, 91.2.5, 96.4.8). This is confirmation that the ring finger does pluck this last, lowest string of *krafiad dwbl*, for this finger is in position following on a backstrike of the same string (the interpretation of the 'Z' movement).

TAFLIAD Y BYS

There are 67 instances of this movement in the text. It is indicated by '\7' above the letters for two adjacent strings.

In the triangular notation this is the same as *taked y fawd*, but with the addition of two more notes on the second, lower string. It must be that the movement begins in the same way as *taked y fawd*, with the first, upper string plucked by the forefinger and then damped by the thumb as the middle finger plucks the second, lower string. There will be just one damping here, as in the symbols there is just one blocked note-head and one diagonal stroke.

There has been disagreement over the reading of the two additional triangular notes on the second, lower string, the first of which is drawn with a short horizontal dash through the stem. Most commentators including Dolmetsch, Travis, Dowd and Ellis (1991) read these as two additional plucks; Schaefer reads them as three; Whittaker is uncommitted; Thomas and Polin leave them out in their transcriptions.

Moreover, Dolmetsch marks them *staccato*, and Whittaker considers that this is a possibility. As the note-heads are unblocked we have no reason to suppose this, however.

What is certain here, from the scheme, is that the additional plucking of the lower string is performed by the forefinger, which has already plucked the first, upper string. Evidently the name *tafliad y bys* - a throwing /dislocation /flinging /setting-back of the finger - refers to this unusual feature whereby a single finger plucks more than just a single string.

The reason for this unusual feature is made clear by an

examination of the contexts in which it occurs. Usually the movement is immediately preceded by a pluck of a string <u>above</u> those of the movement itself, and is followed by a pluck of a string <u>below</u> those of the movement. This is to say that it occurs in quite steeply falling melodic figures, where the hand-position has to drop down.

For example, in 26 instances it follows a *plethiad byr* (15.2.5 f) or a *plethiad y pedwarbys* movement (73.4.6 f), both of which always end on the string <u>above</u> that on which the *tafliad y bys* begins. In 21 instances it is followed by a *hanner krafiad* movement beginning on the string <u>below</u> the one on which the *tafliad y bys* ends (54.6.22 f). Consequently it is helpful for the movement to end on the forefinger rather than the middle finger so that the middle finger will be available for what follows.

Another unusual feature of this movement is that two consecutive strikes by a single finger on the same string are indicated by the triangular notation. It is not possible to perform this rapidly except by using the back of the nail for one of the plucks, and so it seems very possible that this is the purpose of the dash through the stem of the penultimate note, although this does not exactly accord with the use of a <u>vertical</u> bar through note-heads to indicate the use of the back of the nail in the movement *kefn ewin*.

On this reading, the figure becomes: forefinger plucks upper string, which is damped by thumb as middle finger plucks lower string, then forefinger backstrikes and plucks lower string. But it is slightly more comfortable for the forefinger to pluck and <u>then</u> backstrike the lower string; if this is adopted then it would be necessary to interpret the dash through the stem of the

penultimate note as an indication of short duration, which is another quite credible explanation.

The need for the forefinger to pluck two strings in this movement imposes some limit on the speed at which it can be played. But since the strings involved are adjacent, and the plucks are not consecutive - the middle finger pluck happens between them - the movement can still be played rapidly. But it cannot be played at '*arpeggio*' pace, and the same will be seen in respect of *plethiad y pedwarbys* discussed below. These points hold great significance for the uncovering of the rhythm in which the movements are played, as examined in detail in Part 6: RHYTHM.

TAKIAD FFORCHOG

There are 47 instances of this movement in the text (18.1.21 f). It is indicated by a symbol of an oblique stroke '\' superimposed on a lower right quadrant above the letters for two non-adjacent strings.

The width of this movement in relation to the narrower standard form of *taked y fawd* will account for the description '*fforchog*': 'forked'. '*Takiad*' may well be a corruption of '*tagiad*', in which case the term would refer to damping.

Travis transcribes this as four notes, probably because the triangular notation supplies two quotes of the movement.

This movement is related to *taked y fawd*. In the triangular notation the movements are similar: a pair of notes, the first and higher of the two is blocked and plucked according to the scheme by the forefinger. However, in *takiad fforchog* the second, lower note is not on an adjacent string to the first note but two or three strings below, and is plucked by the ring finger according to the scheme. As the two plucked strings are never adjacent it is perfectly comfortable to use the ring finger instead of the middle finger, and this point is yet further confirmation of Schaefer's and Whittaker's scheme.

On the example of *taked y fawd* it will be the thumb that damps the first, higher string.

Ellis (1991) interprets that it is the second, lower string that is damped, but there appears to be no reason to suppose that this movement is based on different principles from the other movements.

The main juxtaposition of the movement is with *taked y fawd*. There are 18 instances where *taked y fawd* is followed by *takiad*

fforchog (18.2.4 f), and in each case the pattern of strings involved is the same. Both movements share the same upper string, and the lower string of *takiad fforchog* is the one below that of *taked y fawd*. This is a comfortable, fast figure with the difference in fingering between the two movements: that the middle finger plucks the lower string in *taked y fawd* and the ring finger the lower string in *takiad fforchog*, whilst the hand position remains constant.

Elsewhere the tendency is for *takiad fforchog* to follow movements, particularly *plethiad y bys bach* (22.2.7 f) and a thumb variant of *y plethiad byr* (22.3.2 f), that end in the thumb plucking the string above that on which *takiad fforchog* begins. These cases confirm that the forefinger plucks this first string.

PLETHIAD Y BYS BACH

There are 379 instances of this movement in the text, and a further 22 instances of a variant of it. It is indicated by '//' above the letters for three strings which are usually adjacent.

The name '*taked y fawd*' gave us one point of entry into the system of covering-finger damping, and it was possible to move out from this movement to a number of related movements to ascertain other examples of covering-finger damping.

Here, the name '*plethiad y bys bach*' gives another point of entry into the system, for the little finger (*y bys bach*) is not used to pluck but to damp, and again there are other movements which are closely related to this one so that it is possible to extrapolate.

Here the triangular notation clearly indicates three adjacent notes played in ascending order. Dart appears to be confused on the fingering for this movement. Schaefer's and Whittaker's scheme yields the order of plucking fingers as middle finger, forefinger and thumb.

Since the little finger (*y bys bach*) is not amongst these it must be that it is used to damp. Of course this is not surprising as the natural weakness of the little finger precludes it from being used to pluck in harping generally, but strength is not required in damping. Blocked note-heads for the first two strings are indicated on p. 35, and the tablature symbol has two diagonal strokes, so the first two strings are damped. One of these must be damped by the little finger.

Whittaker finds the name here somewhat puzzling, since he can see little advantage in damping the first, lowest string with the little finger rather than the middle finger (which plucked it).

Indeed this is the case, as in practice the shortness of the little finger in relation to the ring finger means that it is very difficult and cumbersome to try to damp this string with the little finger without the ring finger inadvertently damping it first.

Yet the problem needs resolving. In practice the alternative - that the little finger damps the second, middle string - is very comfortable indeed. The damping of the first, lowest string by the ring finger then becomes actually unavoidable in practice. The whole movement then neatly fits the natural shape of the whole hand as the fingers are clasped almost together. The naturalness and ease of this needs to be experienced to be appreciated. This fingering is extremely comfortable, and again the strings can be plucked and damped at the speed of a rapid *arpeggio*.

It is notable here that the diagonal strokes indicating the number of dampings are directed upwards as one reads from left to right (not downwards as in all the above *plethiadau*). This has been taken to indicate a rising figure by the early commentators, but strictly this is inaccurate; the direction always only indicates whether the first (or only) damped note is followed by a pluck on a string above or on a string below.

Note that the three strings of this movement are usually adjacent, which is not the case in *plethiad mawr*. But there are 20 instances of *plethiad y bys bach* where the strings are not adjacent (63.5.16 f); here the top string is usually two above the middle string, but it can be as high as four above (81.3.10 f). The lower two strings are always adjacent.

The main juxtaposition is that in 39 instances the movement is followed by the 'quadrant-and-dot' movement, and the significance of this is discussed below.

Another juxtaposition is with *krychu y fawd*, discussed in the following section.

A third major juxtaposition is with a following pluck of the middle and then the top string of the *plethiad* in its standard form: 37 instances (20.1.16 f). In each instance the *plethiad* is above a chord in the lower part and the additional plucks occupy the next two columns above blank lower columns. The directions at 66.2: 'ffordd gwrth=nebu ir diwedd' imply that this format was termed '*gwrthwynebiad*': objection/opposition/

contradiction, which probably refers to the sounding of adjacent, undamped strings, for there is no indication of damping here. The forefinger and thumb can pluck the last two notes.

A fourth major juxtaposition is with *plethiad y wahynen*. In 22 instances *plethiad y bys bach* is prefaced by *plethiad y wahynen* (22.4.8 f), and in every instance the string of *plethiad y wahynen* is the same as the lower string of *plethiad y bys bach*. This is confirmation that this string is indeed plucked by the middle finger in *plethiad y bys bach*, for this finger is in position for the pluck following a backstrike of the same string. Any other relationship between the two movements would not be rapidly practicable. And from this - that the middle finger plucks the lowest string - it simply follows that the forefinger and thumb must pluck the other strings.

<u>Variant with krychu y fawd</u>

There are 22 instances of a variant of *plethiad y bys bach*, which are indicated by the symbol for *krychu y fawd* directly above the symbol for *plethiad y bys bach* (20.4.2 f). As no extra strings to

the three of *plethiad y bys bach* are indicated here, it is clear that the movement entails at least one extra *crychiad* strike by the thumb to what must be the top string of the *plethiad* movement.

As the movement occurs in contexts such as the *klymau kytgerdd* where movements above chords in the lower part are not preceded by *crychiadau*, it must be that the *crychiad* follows the *plethiad*. And this must be immediately since the symbols for two movements are combined in a single column, not spread over two. There is no problem in fingering this as the thumb, having plucked the last note of the *plethiad*, is in position to strike the same string with the back of the nail.

It should be noted that any more strikes than this would create a movement of more than four notes and would restrict the compactness of the possible metrical units available. This is not to say that more strikes would not have been used where there is room for them.

This fingering is confirmation of the assignment of the thumb on Schaefer's and Whittaker's scheme to the top string of *plethiad y bys bach*. If any of the fingers were used instead, then the thumb would not naturally be in position for the *crychiad*.

This variant appears to be distinct from the common combination of the symbols for *plethiad y bys bach* <u>followed</u> by that of *krychu y fawd* in the following column (18.1.13 f), of which there are 25 instances. This is clearly indicative of a significant period between the two where the *krychu* symbol is above a note or chord in the lower part (as at 18.1.13), but less clear where it is not (as at 38.4.3, where it occurs in a context of variation formulae that elsewhere involve the *krychiad* and the

plethiad sharing one column).

Here again the combination of these two movements confirms the fingering scheme - they can be played together swiftly and comfortably since the *crychiad* is always on the top string of the *plethiad*, and the thumb plays them both.

PLETHIAD MAWR

There are 148 instances of this movement in the text. It is indicated by '/' above the letters for three strings, of which only the lower two are adjacent.

This movement is identical in the triangular notation to *plethiad y bys bach* except that the second, middle note is unblocked and the third, highest note is two strings above that, never adjacent. In fact the text reveals that this last note is always at least two strings above - it can be more, and without doubt this will have led to the name:- '*mawr*' is 'big' or 'great' and will refer to the width or spread of this movement in relation to the usual narrow form of *plethiad y bys bach*. The highest is five strings above the middle note (48.6.10 f).

Here we have a confirmation of Dart's identification of the blocking of triangular notes as damped notes, for it appears that it is permissible for two non-adjacent notes to sound together, which of course makes sound harmonic sense.

Also this provides confirmation of the identification of the damping of the second string by the little finger in *plethiad y bys bach*, which here does not happen. If the little finger was used to damp the first, lowest string in *plethiad y bys bach* and *plethiad mawr* then '*y bys bach*' would not be a distinguishing characteristic of the former movement.

On the example of *plethiad y bys bach*, the first, lowest string, plucked by the middle finger, is damped by the ring finger as the second, middle string is plucked by the forefinger. Following this the last, high (sometimes very high) string is plucked by the thumb, and this comfortably exploits the wide spread that is possible between the fingers and the thumb.

The main juxtaposition of *plethiad mawr* is with *plethiad y wahynen*. There are 49 instances of *plethiad y wahynen* prefacing *plethiad mawr* (48.6.11 f), and in every single instance the string of *plethiad y wahynen* is the same as the first, lowest string of *plethiad mawr*. This is confirmation of the fingering of *plethiad mawr*, for the middle finger is in position, following a backstrike on this string, to pluck it at the start of *plethiad mawr*. The hand position will remain fixed and no fingers switch strings. Any other relationship between the two movements would not be rapidly practicable. And as the middle finger plucks this string, it must be the forefinger and thumb that pluck the upper two strings.

There are some instances where the adoption of a compact rhythmic scheme makes the staggering of the last two notes rather difficult, in spite of the clarity of the off-setting of these notes in the triangular notation. The main area is at 48.6-49.2.

From the context, it appears that the symbol for *plethiad y pedwarbys* has been mistakenly written for *plethiad mawr* at 63.3.5, and that the *plethiad mawr* symbol has been omitted twice at 54.7 and seven times at 92.5.11-19.

Y PLETHIAD BYR

The short *plethiad*; shorter than the other three ascending *plethiadau*.

There are 878 instances of this movement in the text, and a further 213 instances of a variant that requires a different fingering. This high frequency shows that the movement is fundamental to the fingering system. Indeed it constitutes a rudiment which acts as a component of many other movements. A graphic example of this is the use of its tablature symbols - '/' above the letters for two adjacent strings - for the first half of the symbols of the longer *plethiad y pedwarbys* movement (discussed below).

All commentators, including the early ones from Morris to Glyn, have been agreed that this is an ascending shaping. The triangular notation for this movement shows two notes on adjacent strings, the first being the lower, and the movement repeated as usual with a second quote of the pair of notes. On this occasion, however, the second quote differs from the first in the stem direction of the first note.

Dart identifies this movement as Bunting's *leagadh anuas*, and accordingly identifies the plucking fingers as the forefinger and thumb. To this he adds that the first string is to be damped by the thumb, which is totally impracticable as the thumb is engaged in plucking the second string at this point.

The note-heads and stems of the first quote are the same as for the first two notes of *plethiad y bys bach*, so again on Schaefer's and Whittaker's scheme the plucking fingers are the middle finger and the forefinger. And as in *plethiad y bys bach* this is entirely comfortable and effective in practice. The thumb

can often be placed on the pad of the forefinger to ensure a soft pluck by the forefinger.

The second quote would yield, according to the scheme, that the forefinger would pluck both strings. This could be by a *glissando* action (Bunting includes *glissandi*) but this would differ so strongly from the fingering of the first quote that it is not credible that two such radically different fingerings could share the same name. Hence I join Whittaker in dismissing the second quote as a scribal error. (Robert ap Huw had already had trouble, blocking out two earlier attempts at this movement.)

Only the first string is damped. Whittaker assumes that it is damped by the middle finger - the finger that plucks this string. This is to not take account of the speed advantage of the covering-finger damping established in *taked y fawd* and *plethiad y bys bach*. Yet Whittaker goes further and infers from the juxtaposition of ornaments that same-finger damping is a general rule. He does not detail the grounds for the inference, however, and these remain obscure.

On the example of *plethiad y bys bach* and *plethiad mawr* it will be the ring finger that damps this first string.

The main juxtaposition of *y plethiad byr* is with *plethiad y wahynen*. In 259 instances of *y plethiad byr* and its thumb variant (examined below) the movement is prefaced by *plethiad y wahynen* (22.4.3 f), and in every instance the string of *plethiad y wahynen* is the same as the lower string of *y plethiad byr*. This is confirmation that this string is indeed plucked by the middle finger in *y plethiad byr*, for this finger is in position for the pluck following a backstrike of the same string. The whole sequence then becomes: backstrike of lower string by middle finger, then middle finger plucks lower string, which is damped

by ring finger as forefinger plucks upper string. This is a compact, comfortable figure.

A particularly widespread juxtaposition, 52 instances, is a single note in the upper part followed by *y plethiad byr* in the next column (51.6.6 f). Here the relationship is again fixed: the first note is always on the string above the highest of the *plethiad*. Because one or other of the two columns involved is always blank in the lower part, the implication is that the first note is tucked in shortly before the *plethiad*, and indeed it can only be performed swiftly in the order of plucking: thumb, middle finger, forefinger.

Another juxtaposition of *y plethiad byr* is with *ysgwyd y bys*. In 18 instances the standard form of *y plethiad byr* is prefaced by *ysgwyd y bys* (44.2.2 f). Here as we would expect, the relationship is different from the use of *plethiad y wahynen* and *y plethiad byr*. Instead of the lower string being common to both movements, in every instance it is the upper string. This is confirmation that this string is indeed plucked by the forefinger in *y plethiad byr*, for this finger is in position for the pluck following a backstrike of the same string. The whole sequence here becomes: backstrike of upper string by forefinger, then middle finger plucks lower string, which is damped by ring finger as forefinger plucks upper string. Again this is a compact, comfortable figure.

One complication, not really a variant, is that the tablature symbol for *y plethiad byr* - '/' - is used in an *ostinato* figure, where the symbol alternates with '\', thus:

/ \ / \ / *etc.*

One would suppose that this was an alternation of *y plethiad byr*

with *taked y fawd*, but the symbols are written over the symbols for a <u>single</u> string rather than the two (or more) strings that the table of figures on p. 35 of the MS. leads us to expect. This fact leads Dowd to conclude that the two movements involved are variants of *ysbongk* and *kefn ewin* respectively. Whittaker suggests a series of *staccato* movements on one string.

Other interpreters, no doubt suspecting abbreviation, supply extra strings. Crossley-Holland supplies two more: a lower first string to '/' and an upper, first string to '\'. Travis supplies two higher strings on no consistent scheme. Schaefer supplies six extra strings.

The problem can be resolved. On the example of 79.4.6 where two strings <u>are</u> written in an example of the most common of these *ostinato* figures, it appears that elsewhere it is the string <u>above</u> the one that is written which has been omitted in order to abbreviate. So just one string needs to be supplied.

This conclusion is supported by the context. The figure is usually begun with *plethiad y wahynen* on the same string which is written throughout. As we have just seen, elsewhere the concatenation of *plethiad y wahynen* and *y plethiad byr* always ends on the string above the one on which the figure begins (as indeed it must to be practicable according to the fingering). So in this concatenation the same must apply; it will be the string <u>above</u> the one written which has been omitted, not the one below.

This is a most important conclusion as this figure is almost always used as a close, and when pieces containing it are classified as to their modality, they should be classified according to the string <u>above</u> the one indicated in the tablature.

For example, where:

```
╱   ╲   ╱
b   b   b
```

is written the passage ends on the c string, and the passage or the piece has to be classified as Mixolydian, not Lydian, on the tuning detailed in Part 3: TUNING, pp. 61-4.

There is cause for some doubt about the consistency with which this method of abbreviating has been put into effect: the formula at 77.2.1-4 looks as if it has been changed by mistake into that at 78.4.1-4 f.; i.e. it is as if in the latter the lower string may have been omitted instead of the upper.

There are several variants of this *ostinato* figure. One distant relative is an *ostinato* passage at 86.5.11-18. This passage is unique in that instead of the symbols alternating above the letters for a single string, they alternate above the letters for two strings which themselves alternate in pairs, and the figure is not prefaced by *plethiad y wahynen*. From the harmonic context it appears that in this short passage it is the strings below the ones written which have been omitted; that the scribe has not been entirely consistent in implementing this principle of abbreviation.

There are 29 instances of '╲' written above a single letter but not in a context of alternations of with '╱' (58.3.16 f). Of these all but 7 (60.2.1-60.4.5) are preceded by the string above. A similar situation exists in 10 instances of the '╱' symbol (60.4.10-62.1.10), where in each instance the symbol is followed by the string above.

Two alternative interpretations can be argued for here. On the example of the *ostinato* figures discussed above, we could expect that these are further abbreviations, so that the string above the '╲' and the string below the '╱' needs to be supplied.

Alternatively, it may be that since we already have these strings quoted in adjacent columns in 32 of the 39 instances, the movements *taked y fawd* and *y plethiad byr* have been spread over two columns instead of one; presumably to indicate a longer time value than usual. On this interpretation the other 7 instances would need to be considered as inconsistencies, where the '\' has been placed on the first not the second note of the movement, for each of these instances is immediately followed by the symbol for the string one or two below.

This latter interpretation is the more probable of the two as the same movements are to be found in the lower hand (60.2 for example), and it is not conceivable that the lower hand would be trained to execute rapid *plethiad* movements else there would be easily apparent evidence of it.

<u>Variant</u>

There are 213 instances of a variant of *y plethiad byr*, where unlike the quote on p. 35 the two strings are not adjacent. The most common is with the upper string two above the lower (15.2.4), but it can be anything up to 7 strings above (71.4.3 f, where the context shows the symbol has been omitted).

Note that in some cases, as happens here and there with many of the transcriptions of movements, a single transposition error occurs - a pair of letters are swapped in position, the higher being written below the lower (e.g. compare 16.2.4 with 15.6.16).

It is possible to play many of the cases that span three and even four strings with the forefinger, but the majority of cases where the strings are not adjacent demand the use of the thumb, as Whittaker notices. The fingering then becomes: middle finger plucks lower string, which is damped by the ring finger as thumb

plucks upper string. This is entirely comfortable and exploits the available spread between fingers and thumb.

In two instances where the movement spans four strings it is prefaced by *ysgwyd y bys* on the string below the upper string, and so here the forefinger will <u>not</u> be in position to pluck the upper string, following on a strike with the back of the nail on the string below (50.2.6, 50.3.18). This is confirmation that the thumb is indeed used to pluck the upper string in this variant.

We will see in the variants to the following movement - *plethiad y pedwarbys* - that substitution of the forefinger by the thumb is common practice, and that this thumb variant of *y plethiad byr* provides a rudiment for other movements, both in the fingering and in the tablature symbolism.

PLETHIAD Y PEDWARBYS

There are 226 instances of this movement in the text, of which 97 deviate from the standard form. The standard form is indicated by two columns of symbols: '/' above the letters for two strings, followed by a cross above the letters for two strings. The lower string in both columns is the same. This two-stringed form is the one cited on p. 35.

As with *tafliad y bys*, there has been fundamental disagreement here; in this case it concerns the order of the notes. The triangular notation shows two quotes of four notes, and unlike all the other movements each quote has pairs of notes in rough vertical alignment with one another. This gives the impression, as one reads from left to right, that two chords are played. Morris interprets the movement this way. Thomas and Polin interpret just the second pair as a chord, Thomas doubling it.

Otherwise, no commentator has chosen to interpret the movement this way; probably such an interpretation would have lacked appeal for the earlier commentators because a chord played on adjacent strings (as illustrated on p. 35) would have seemed odd to them. As both of the lower notes are blocked and therefore damped, this adjacency is not in itself sufficient reason to reject this interpretation.

However, this chordal interpretation does not sit easily with all the other movements, in which the action of the fingers is always shown by clearly staggered triangular notes. In particular it is revealing that the first pair of notes are identical in their note-heads and stems to *y plethiad byr*, <u>and</u> that the first part of *plethiad y pedwarbys* is identical to *y plethiad byr* in the tablature. It does seem probable, then, that

the vertical alignment is the result of bad draftsmanship or copyist's error.

All commentators from Dolmetsch on have been agreed that the first pair of notes are played in series, not simultaneously, starting with the lower of the two. On the example of *y plethiad byr* this is begun with the middle finger plucking the first, lower string, then this is damped by the ring finger as the forefinger plucks the second, upper string. The identification of these plucking fingers is arrived at by Dolmetsch, Schaefer and Whittaker.

Dolmetsch, Travis, Dowd, Dart, Schaefer and Ellis (1991) all interpret the second pair of notes as descending, without making out a case for this interpretation. It results in the lower of the pair of notes being left to sound, as in all these interpretations there is no damping of this note. The result contradicts the harmonic sense of all the other movements, where the last note is always consonant with the notes of the lower hand in the text. Consequently this interpretation of the order has to be rejected.

As we introduce the necessary damping (for this note-head is blocked) the dissonance is reduced, but here again there is a contradiction with all the other movements, since elsewhere it will be noticed that an unblocked note-head is never followed by a blocked one. The sense of this becomes clear by looking at the general harmonic contexts in which the movements are used in the text, which are that when a note is left to sound it is consonant with the lower part, and in this way each movement is concluded.

So this interpretation of the second pair of notes as descending has nothing to recommend it. Whittaker argues convincingly for the other option, that the pair are ascending,

by citing an incidence of a general principle that the same patterns of main melody notes are often maintained over several sections of a piece whilst the auxiliary notes are varied. From most examples of this movement it can be deduced that the main melody note is always the higher of the pair: the one with the unblocked note-head; and the auxiliary note is the lower one with the blocked note-head. Confirmation that the pair are ascending is obtained below from some of the variants of this movement.

On Schaefer's and Whittaker's scheme the lower note is plucked by the ring finger, and the upper one by the thumb. It will be noticed that the ring finger is already in position for plucking the lower string, since it has already damped this string following on the initial pluck of the string by the middle finger. Here we have the introduction of a new principle: that a digit that has damped a string may then conveniently be used to pluck it. There is a simple practical logic in using a particular digit to damp and then to pluck a particular string: it is supremely economical. There could never be any advantage to doing otherwise.

A development of this principle is the concept of the hand being anchored by a finger resting on a string, and this contact being maintained by one finger or another for whole passages. I will develop this concept of what we may term a closed system of fingering in contrast to an open one later.

Turning now to the upper string, the same logic can apply. Although the note-head of the upper string in the first pair is not blocked, it would be consistent if this string was damped by the thumb prior to the thumb plucking it. This would avoid a clash of this string and the one below sounding simultaneously.

Such a clash will be seen to be studiously avoided in *plethiad dwbl* by the thumb being used to damp and then to pluck.

To recap, the fingering sequence of the entire movement, on adjacent strings, is:- lower string plucked by middle finger and damped by ring finger as upper string is plucked by forefinger, then thumb damps this string as lower string is plucked by ring finger, then this string is damped by middle finger as thumb plucks upper string.

At the conclusion of the movement the middle finger has come to rest on the lower string. As the movement begins with this finger plucking this string it is clear that the movement is a cycle which could easily be repeated, and indeed consecutive *plethiad y pedwarbys* movements are often chained in such a way in the text. The effect of this can be a prolonged, rapid shake where both notes are as clear, because of the damping, as they would be on a wind instrument.

The reference in the name of the movement to '*pedwar bys*' will be to the four digits involved: the thumb and the first three fingers.

Dart identified this movement with Bunting's *barluith fosgalta*, but even on his fingering the movements are not the same.

Plethiad y pedwarbys provides further proof that covering-finger damping is used. If we consider the lower string:- once this is initially plucked, if it were damped by the same finger that plucked it then this same finger would be used for the second pluck. Thus both notes on the lower string would have to be <u>identical</u> in the triangular notation. Since they are not identical, same-finger damping is not a possibility here.

The major juxtaposition of *plethiad y pedwarbys*, both in its

standard form and in the following variants, is with *plethiad y wahynen*. In 26 instances *plethiad y pedwarbys* is prefaced by *plethiad y wahynen* (55.1.13 f), and in every instance the string of *plethiad y wahynen* is the same as the lower string of *plethiad y pedwarbys*. This is confirmation that this string is indeed plucked by the middle finger at the commencement of *plethiad y pedwarbys*, for this finger is in position for the pluck following a backstrike of the same string. Any other relationship between the two movements would not be rapidly practicable.

Although illustrated on p. 35 as being performed on two adjacent strings, 97 instances of the movement are on <u>three</u> strings, but the fingering will be unchanged. The higher string of the second column is not adjacent to the bottom string, but two strings above. The movement involves a total of three strings, with what has to be the thumb plucking the string above the one it normally plucks (16.4.1 f). No fast damping of the second note is possible here.

This movement is juxtaposed with *ysgwyd y bys*. In 3 instances this form of *plethiad y pedwarbys* is prefaced by *ysgwyd y bys* (60.6.15 f). And as we would expect, the relationship is different from the use of *plethiad y wahynen* and *plethiad y pedwarbys*. Instead of the lower string being common to both movements, in each instance it is the <u>middle</u> string. This is confirmation that this string is indeed plucked by the forefinger in *plethiad y pedwarbys* in general, for this finger is in position for the pluck following a backstrike of the same string.

<u>Variant with krychu y fawd</u>

There are 2 instances of a variant of *plethiad y pedwarbys*, which

are indicated by the symbol for *krychu y fawd* directly above the symbol for the three-stringed form of *plethiad y pedwarbys* (66.3.9 and 67.1.13). As no extra strings are indicated here, it is clear that the movement entails at least one extra *crychiad* strike by the thumb to what must be the top string of the *plethiad* movement.

On the example of the similar combination of *plethiad y bys bach* with *krychu y fawd*, with which significantly these instances are interspersed, it must be that the *crychiad* follows the *plethiad*. And this must be immediately since the symbols for two movements are combined in a single column, not spread over two. There is no problem in fingering this as the thumb, having plucked the last note of the *plethiad*, is in position to strike the same string with the back of the nail. There may have been more strikes.

This fingering is confirmation of the assignment of the thumb on Schaefer's and Whittaker's scheme to the second plucking of the top string of *plethiad y pedwarbys*. If any of the fingers were used instead, then the thumb would not naturally be in position for the *crychiad*. Here again the combination of these two movements confirms the fingering scheme - they can be played together swiftly and comfortably since the *crychiad* is always on the top string of the *plethiad*, and the thumb plays them both.

Thumb variants

There is a family of variants on *plethiad y pedwarbys* which require a slightly different fingering, totalling 41. The variants do not involve the string immediately above the bottom string, but strings from two to five above the bottom string. It is impracticable to spread the forefinger and the middle finger

(which plucks the first note on the bottom string) across most of these intervals. Indeed in the other movements the tendency is for adjacent fingers not to be spread beyond adjacent strings - a comfortable and fast feature of the system.

Here the fingering must generally depart from that of *plethiad y pedwarbys* to avoid spreading the fingers, and to exploit the wide spread between the fingers and thumb, by using the thumb to pluck the second note as well as the last. The thumb variant of *y plethiad byr* provides the rudiment for this substitution of the forefinger by the thumb. Note that these two notes plucked by the thumb are almost always on adjacent strings or on a single string, so this can be done quite rapidly by the thumb <u>unless</u> these notes are to be played consecutively. So this confirms that the last two notes are staggered, both here and in the standard fingering of *plethiad y pedwarbys*.

In three variants in this family the top two strings descend one string. There are 11 instances of the top strings being 5 and 4 strings above the bottom string (55.1.14 f); 6 instances of 4 and 3 above (82.1.8 f); and 14 instances of 3 and 2 strings above (56.3.5 f).

In two variants the top two strings descend two strings. There is just 1 instance of each of these. The top strings are 5 and 3 strings above (80.3.14); and 4 and 2 strings above (80.3.11).

In one variant the top two strings ascend one string: there are 8 instances of the top strings 3 and 4 strings above (56.3.3 f).

Presumably this family of variants of *plethiad y pedwarbys* which do not use the forefinger would not have been known by that name as they cannot be performed using four digits, only three.

<u>Four-string variants</u>

Another family exists of variants consisting not of three but of four strings, totalling 11 instances. The additional string is added above the first column and it is either 3 or 4 strings above the bottom string. The lowest two strings in the first column are always adjacent. The higher string of the second column is from 2 to 4 strings above the bottom string.

The main variant in this family has the two top strings of the columns ascending one string, from 3 to 4 above the bottom one. There are 9 instances (77.3.11 f). Another variant has the top strings descending one string, from 3 to 2 above; one instance only (88.1.13). Another variant also has the top strings descending one string, but from 4 to 3 above; one instance only (88.1.17).

It will be noticed that the first column in this family is the same as *plethiad mawr*, just as the first column of the standard *plethiad y pedwarbys* is the same as *y plethiad byr*. This reinforces the view that the latter two share the same fingerings. The implication for this family of movements is that they begin with the fingering of *plethiad mawr*, which is detailed above. In *plethiad mawr* the ring finger damps the first strike of the bottom string, so it would already be in place for the second strike of the bottom string in this family of variants. The perfection of this is confirmation of the fingering of *plethiad mawr*.

The fingering for this family of four-string thumb variants

is then:- middle finger plucks bottom string, ring finger damps bottom string as forefinger plucks the string above, thumb plucks one of the upper strings, ring finger plucks bottom string, and finally middle finger damps bottom string as thumb plucks the other upper string. As with the standard form, these variants are often prefaced by *plethiad y wahynen*, and an easily produced but complex and distinctive melodic figuration results.

In all these cases of the thumb plucking twice in one movement, its notes are usually either on a single string or on adjacent strings. Clearly the entire movement is performed fairly rapidly else we should expect that often the strings would not be adjacent. But, as we might expect from the movement in general occupying two columns, a limit is put on how fast it can be executed because of the need for the thumb to return for a second pluck. This is an important point which is examined in detail in Part 6: RHYTHM.

PLETHIAD DWBL

There are 74 instances of this movement, the 'double *plethiad*', in the text. It is indicated by '\\' above a column of three letters of which the highest two refer to one string, and the lowest to the string next below.

In the triangular notation this is the same as *tagiad dwbl* with the addition of a second pluck of the first, upper string, which is plucked, according to Schaefer's and Whittaker's scheme, by the thumb. The thumb, it must be remembered, has already damped this string, which is to say it has come to rest on this string. Therefore it is already in position for this additional pluck of the string, and in turn because the string is already occupied by the thumb it is inconceivable and impractical that any other digit would be used for the additional pluck of this string. So we have here a simple confirmation that we have the correct interpretation of the rôle of the thumb in *taked y fawd*, *tagiad dwbl*, *krafiad dwbl*, *tafliad y bys* and *takiad fforchog* - the thumb does indeed damp this first string plucked by the forefinger.

We have already met with an example of this damping-and-plucking principle in *plethiad y pedwarbys*, which is the only other movement to include a pluck of a string already damped. In both movements the order of plucking reveals that covering-finger damping is used.

Plethiad dwbl most closely resembles *plethiad y pedwarbys*, so on the example of the latter, where the damping of the lower string plucked by the middle finger is done by the ring finger, the lower string in *plethiad dwbl* must be damped by the ring finger.

In every case except one the symbol for *plethiad dwbl* is preceded by that for *ysgwyd y bys*. The exception, at 56.1.1, is ambiguous since this line and the following one are an excerpt: the conclusion of the *profiadau*. We are not provided with whatever immediately precedes this column, but on the example of all the other instances of *plethiad dwbl*, we must suppose that it is the symbol for *ysgwyd y bys*.

So, this is an extraordinary pattern of juxtapositions; no other juxtaposition of movements approaches 100% of the occurrence of any symbol. But as is always the case with common concatenations, there is a set pattern: in this case the *ysgwyd y bys* is always on the upper string of the *plethiad dwbl*. This is consistent with the plucking scheme, as the forefinger, having just struck the upper string, is in position to pluck it at the beginning of the *plethiad*. This is confirmation that the forefinger is used in this way, as demonstrated above for *tagiad dwbl*, and in turn these two movements together are confirmation for the same in *taked y fawd* and *tafliad y bys*.

As detailed in Part 6: RHYTHM, the occurrence of this concatenation in certain parts of the text necessitates the adoption of a minimum standard bar throughout of five divisions, not four. (Otherwise no more than four is sufficient, and this has some support from contemporary expositions.) To say that this is an uncomfortable conclusion to arrive at is an understatement.

There is an explanation which resolves the difficulty, and I have adopted it. The symbol for *plethiad dwbl* is very similar to that for *krafiad dwbl*; indeed it has to be on the logic of the tablature symbolism: two strokes for two dampings, these descending as the movements begin with a falling turn, and three letters below for three notes. The consequence is visually

unfortunate, as the only distinction between them is the relationship between the highest pair of letters: they are the same in *plethiad dwbl* and different in *krafiad dwbl*.

Such a close relationship exists between <u>no</u> <u>other</u> pair of symbol sets - in all other pairings either the movement symbols differ or the number of letters varies. In fact were it not for the need to closely inspect the relationship of the letters to one another in these two movements, the tablature would be quite serviceable as a source for sight-reading. A simple way of overcoming the difficulty would be to modify one of the symbols in some way which was in keeping with the general logic of the symbolism.

Note that the prefacing of *plethiadau* by *crychiadau* fortuitously aids sight-reading, since the bold *crychiad* symbols act as cues about which *plethiad* is to follow (so common and reliable are the set patterns between these). This could have inspired what may have been the simple expedient of automatically prefacing every *plethiad dwbl* symbol with the *ysgwyd y bys* symbol, to distinguish it clearly from *krafiad dwbl*.

Certainly the music is rather unbalanced melodically as well as rhythmically by playing the unwavering *ysgwyd y bys* before every *plethiad dwbl*, since no other *plethiad* is always prefaced by one particular *crychiad*.

Interpreters may choose to include the *ysgwyd y bys* here as a musical shaping, but the price for this has to be five-note bars throughout unless the consistent interpretation of metre and rhythm is ignored.

KRAFIAD SENGL

There are 14 instances of this movement, and a further 30 instances of a variant of it. It is indicated by '\' above the letters for three adjacent strings.

This is a three-note movement, a blocked note-head followed by an unblocked one on the string below and another on the string above the first note. The triangular notation is a little vague as to the order of the last two notes: they are almost in vertical alignment, the note-head of the upper being slightly to the right of that of the lower, although the stem of the upper is clearly to the right of the stem of the lower.

Dart, Whittaker, Polin and Ellis (1991) interpret the last two notes here as plucked simultaneously; whereas Dowd, Dolmetsch and Schaefer interpret them as staggered, the upper lagging behind the lower. Nowhere is there a discussion of the issue.

On balance the graphics of the triangular notation have to be judged as favouring the latter interpretation - if Robert ap Huw had intended to indicate the notes as simultaneous he could have made a much better job of it. A stronger inference can be drawn from *plethiad mawr*, the only other movement that concludes with two unblocked note-heads. In *plethiad mawr* the notation of these notes is clearly staggered. It seems most likely then that they are staggered in *krafiad sengl*.

On Schaefer's and Whittaker's scheme the three strings are plucked by the middle finger, the ring finger and the forefinger. And as is always the case with the scheme this identification is entirely comfortable in practice.

The first, middle string has a blocked note-head and must be damped. As all the other fingers are occupied, this string must

be damped by the little finger, which requires some practise. It might be complained that because of the name *plethiad y bys bach*, damping by the little finger would be confined to that movement, but we only have reason to expect that it would be confined to *plethiad y bys bach* amongst the movements named as *plethiad -*; this movement is named as *krafiad -*.

<div align="center">Variant</div>

A variant of *krafiad sengl* exists, unlisted on p. 35, which is actually more common than *krafiad sengl*. The movement includes an additional string, two strings above the third, upper string of *krafiad sengl*. Because of its height, this string must be plucked by the thumb, thus confirming that in *krafiad sengl* the first three fingers pluck the other three strings of the movement. Here again is definite confirmation of Schaefer's and Whittaker's scheme of the plucking fingers, for this is the only way in which a four-string movement can be played, given that the little finger cannot be used to pluck and that a *glissando* cannot be used because the strings are not consecutive.

Travis transcribes this as if it were a variant of *krafiad dwbl* followed by a note on the additional higher string, but as the symbol is '\' and not '\\' the movement must be related to *krafiad sengl*.

Because the additional string is consonant with both the strings left sounding in *krafiad sengl* and with the lower part we must assume it is not damped. In turn this implies that it is played at the end of the movement. The question remains as to whether this is simultaneous with the third pluck, or whether it is a fourth pluck.

On the example of the other *plethiad* movements, it would be

unusual to have as many as four plucks. *Plethiad y pedwarbys* has four but it often clearly spans two chords in the lower part and this movement does not - it appears as more compact, occupying a single column.

On the other hand, in *plethiad mawr* the triangular notation clearly shows a staggering of the two strings left sounding, implying that ascending arpeggiation was in use, so probably this movement is finished by something close to a three-note *arpeggio*. This is possible within the rhythmic framework established in Part 6: RHYTHM.

From the context, it appears that the symbol for *krafiad dwbl* has been mistakenly written for the symbol for this variant of *krafiad sengl* at 96.5.7, 96.5.12 and 96.6.9 (compare 91.5.1).

This makes a total for this movement of 30, more than double that of *krafiad sengl* itself. They all happen to be towards the end of the text, from 72.1.11 onwards. The main juxtaposition is that they tend to be prefaced by the 'Z' symbol or *ysgwyd y bys*: totals 9 and 5 respectively. The *ysgwyd y bys* symbols, from 73.4.1 to 74.4.1, are replaced in quotes of the same passage by 'Z' from 74.5.8 onwards, and as argued above, the *ysgwyd* symbols should be read as 'Z'.

In all of these 14 instances of the 'Z' movement prefacing this variant of *krafiad sengl*, the string of the 'Z' movement is the same as the lowest string of the variant. This is confirmation that this string is indeed plucked by the ring finger in the *krafiad sengl*, for this finger is in position for the pluck following a backstrike of the same string in the 'Z' movement.

HANNER KRAFIAD

There are 156 instances of this movement, the 'half *crafiad*' in the text, and a further 4 instances of a variant of it. Its standard indication is '.\' above the letters for two adjacent strings. Ellis (1991) interprets this as a *glissando* by the thumb, forefinger or middle finger.

The triangular notation for this movement is the same as that for *krafiad sengl* except for the omission of the last note. The plucking fingers are the middle finger and the ring finger. The damping of the first note of the pair - the upper string - would be done by the little finger on the example of *krafiad sengl*.

It is just possible that this damping would be done by the forefinger on the example of *krafiad dwbl*. However, this movement is musically the same as *taked y fawd*, and clearly substitutes for it in contexts which are too low to warrant committing the forefinger and thumb (which are used in *taked y fawd*). Thus it would not make sense to commit the forefinger to a damping here either. Most probably, then, it is the little finger again that damps.

This substitution of *y plethiad byr* by *krafiad dwbl*, in fact an alternative fingering for the same melodic shaping, is interesting because it reveals a concern for economy of movement in hand-position. In effect instead of the hand having to move down to accommodate a fall in the melody line, the width of the hand is exploited by the melody. This is a sign of a very sophisticated technique.

A very widespread juxtaposition of this movement is found in 21 instances of it following *tafliad y bys* (54.6.22 f). In each

case the movement begins on the string below the one on which *tafliad y bys* ends. The fingering according to the scheme of the triangular notation is that the higher of these two strings is last struck by the forefinger and the one below is plucked by the middle finger at the beginning of *hanner krafiad*. Only on this fingering can the two movements be played in quick succession, and this is strong support for the fingering scheme.

Sometimes the tablature symbol for this movement departs from the standard form. A second dot is added after the oblique stroke (e.g. 15.6.18) or a single dot follows the stroke (e.g. 16.2.6). It seems that these are aberrations as the scribe gets into his stride, for they occur most frequently in the earlier pages, and this may be confirmation that the pages were written in this order. Certainly there is no musical significance as the above examples are quotes of a *diwedd* passage that has already been stated with the standard form (at 15.2.6 and following).

However, two of these instances (84.4.12 and 90.4.12) are significant, as the reversed symbol occurs above the letters for two strings which are not adjacent but three strings apart. It is not practicable to finger such a movement in the same way as *hanner krafiad*. This, considered with the general context of both instances, suggests strongly that the movement is a variant of *takiad fforchog*, in which the lower string is three strings, not the usual two strings below the upper. It would be odd to have two different symbols for one fingering, but there could be several reasons for distinguishing between the two. Perhaps they

are accented differently,[13] and they warrant consideration separate from *hanner krafiad* in the summary in the Appendix.

Three more instances of the reversed symbol are significant (82.6.6, 83.2.2 and 83.6.12) as they occur above the letter for a single string, not the usual two. They may have some relationship to the case where the '\' symbol without the dot occurs in similar contexts, discussed above in the section on *y plethiad byr*. In each instance the movement is preceded by a pluck of the string above, so probably it will involve a damping of this string. Because the movement is not a low one its fingering will have no obvious relationship to the fingering of *hanner krafiad; taked y fawd* fingering would be appropriate.

<u>Variant</u>

There are 4 instances of a variant of *hanner krafiad*. The variant involves an additional, higher string. This can be 7 strings above the bottom string - 1 instance (97.1.1), or 4 strings above the bottom string - 3 instances (97.1.7 f).

This additional string is consonant with the string left sounding in *hanner krafiad* and with the lower part so there would have been no need to damp it. In turn this suggests that this additional string was plucked at the end of the movement. It can only be plucked by the thumb because it is too high to be reached by the forefinger. This is perfectly comfortable as long as the pluck is made after the pluck by the ring finger. The full

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[13] As the first, damped string in this movement is the octave of a note in the lower part, I propose that it be accented, (an exception to the rule established in Part 6: RHYTHM (pp. 33-50) that it is the second note of each movement which is accented). Thus would the movement signal strongly the end of the passages it closes.

sequence of fingering becomes: middle finger plucks middle string, little finger damps that string as ring finger plucks bottom string, then thumb plucks top string.

It is notable that the lowness of the fingering of *hanner krafiad* in relation to the hand is exploited here in the width of this movement's harmony. In practice much more than an octave spread can be achieved.

The movement is to be compared with the format of the standard *hanner krafiad* followed by a single higher note in the next column, such as at 85.5.14-15. This format would be fingered in the same way, but would occupy a longer time-value.

QUADRANT-AND-DOT MOVEMENT

There are 39 instances of this movement in the upper part (15.2.3 f) and 3 in the lower part (38.1.14 f).

In the upper part, this symbol occurs in the tablature in the row used for movement symbols, above the letters, but it is not cited on p. 35. We lack the movement's name and its equivalent in triangular notation. Thomas and Polin suggest that it may be a pause mark, but it does not occur at the end of passages. Dowd insists it appears to be a caesura, perhaps because it has a vague relationship to the modern pause mark. Ellis (1991) suggests it may be four plucks on a single string.

The symbol occurs over the letter for a single string played by the upper hand, so on the example of the other movement symbols we can safely infer that the movement involves a single string. Considered as a pictograph, the symbol lacks the vertical repetition of the *crychiad* movements, so the movement is unlikely to involve more than one strike of the string. The symbol does lend itself to interpretation as a pictograph of a fingertip (dot) of the left hand damping a string (quadrant as an exaggeratedly distended string, in the correct position - to the left and below the fingertip). As *tagiad dwbl* ends in a damping movement, this explanation is quite credible. Indeed it would be odd to have a system that included a two-note *staccato* movement but not a single-note one. This simple solution seems quite probable, although the movement does not particularly occur in conjunction with *tagiad dwbl*, i.e. in a context that we know to be a *staccato* one.

In the upper part, the main movement with which this movement is juxtaposed is *plethiad y bys bach*, which precedes

this movement in <u>every</u> one of its 39 occurrences in the upper part. The relationship is fixed: this movement is on the middle string of the *plethiad y bys bach* without exception. This is to say the string below the one left sounding in *plethiad y bys bach*. This raises the possibility that the movement is simply a pluck of a string whilst damping the string above, which otherwise will continue to sound (if the two movements are performed in close succession). On this interpretation although the movement involves two strings, only one string is indicated because only one string is plucked. The fingering of such a movement would have to be: forefinger plucks as thumb damps the string above. This interpretation appears most probable, and has the advantage over the *staccato* interpretation of being simpler.

COLUMN-OF-DOTS MOVEMENT

There is a column of five dots at 54.2.22 and one of four at 72.7.6. Both are within the same melodic formula. Below the symbol are two letters for adjacent strings: d and c, and in the lower part just a c. Travis transcribes the movement as a chord, which does not explain the presence of a movement symbol. Dowd suggests four notes, beginning with the c and ending with the d, which contradicts the way the other movements relate to the harmony of the bass - ending in consonance. Schaefer suggests a lavish, long ascending *glissando*.

The symbol complex is unusual in that it has the element of vertical repetition that we find amongst the *crychiad* group combined with the characteristic of the *plethiad* group that it involves more than one string. The *plethiad* element of a figure involving these two strings in this context would certainly be *taked y fawd*, the d plucked then damped as the c is plucked and left to sound. The *crychiad* element could be a second strike or more of this c string. There is simply not enough information to reach a conclusion on such a rare movement.[14]

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[14] I propose that it be played as *taked y fawd* except accented on the first note, to signal strongly the closing of these passages.

VI. THE UPPER HAND (continued)

In the above examination of the individual movements it has emerged that standard fingering patterns for plucking and damping had been developed which allow for the greatest efficiency of movement, both of the digits and of the hand. It has been seen that this efficiency is maintained not only within each movement, but also between them, in the ways in which the movements are juxtaposed in <u>systematic</u> ways.

But the efficiency extends much further than this. The movements are used in stereotyped ways in combination with single notes and chords which are <u>not</u> headed by the tablature symbols for the movements. Indeed the movements themselves are merely the rudiments, the building blocks, of longer sequences of fingering patterns which are used over and over again not just within a single piece but in different pieces; and these repeats can be either on the same strings or transposed up or down. They can be grouped into large families according to similarities in fingering. These melodic formulae and transposable patterns are discussed by Greenhill and in Part 1: METHODOLOGY & PROVENANCE.

Economy of movement pervades the whole text. With the fingering deduced here the whole text can be swiftly played with an easy, relaxed smoothness. For this it is necessary to have a particular kind of action, indeed a whole general approach, which arises out of the combination of nail-technique with the covering-finger system of damping. This is so entirely different from the flesh technique used without damping, that truly this music is best thought of as designed for a totally different

instrument from what we know of as the harp.[15]

It is helpful to introduce a term for this approach, and 'closed' technique is appropriate, rather as there are 'closed' and 'open' approaches in piping. Closedness and anchoring in every respect are necessary here. The wrists are resting on the soundbox constantly, well below the level of the hands, with the elbows down, and shifts up or down by sliding the wrists are usually tiny. The hands are held quite closely in to the strings, and often the fingers and thumb are bunched quite closely together, to play close harmony or movements on adjacent strings. In the finger *crychiadau* it is often convenient to actually close some of the digits together to support the striking finger. The thumb is held in its natural low position, never above the level of the forefinger. There is nothing forced here, and no training is necessary since everything is in its natural position, almost totally relaxed and supported by the wrists.

Preparation is used, in the sense that the fingers and thumb are put into position on the strings immediately prior to plucking a chord or to the commencement of a movement. Even if a digit does not pluck the first note of a movement, but the second or third it must still be placed in position immediately prior to the commencement; only in this way can the maximum speed be achieved. Very often the digit will already be in place following on a damping of the same string, for no damping finger needs to be taken off the string damped until it is needed elsewhere.

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[15] This holds true of much of what is known of the technique of traditional harp-playing in Wales. The main features which are notable by their inappropriateness and deduced absence are the 'banner-holding' positioning of the digits for plucking by the flesh and the ascending arpeggiation described by Thomas Price (see Rosser), and the '*bys a fawd*' technique of realising accidentals.

With this use of preparation any string that is to be struck in a movement and which happens to be still sounding from an earlier movement is damped by the preparation. Thus most strings actually sound only briefly, either to be damped immediately by a covering finger or later in the preparation to a following movement, since consecutive movements tend to share strings. Whole passages of chords or single notes are the only exceptions.

In these ways the sounding of strings is very controlled; any string sounding in the upper part is usually surrounded by strings which have digits resting on them, either in preparation for a pluck to come or as a result of an earlier damping, and very often both.

Thus the upper hand is usually in contact with the strings, and this can be fairly continuous in parts of the text. This anchoring provides more support to the hand and, most importantly, it provides reference points through the sense of touch for the accurate placement of fingers on neighbouring strings: in short, this music can be played more by touch than by sight (and the Statute does make provision for blind performers).

Accurate placement is essential in both plucking and damping to avoid any jarring by the nails on the string or the adjacent strings. The ideal placement is with the string in contact with the fingertip in such a position that the string is nearly touching the nail. Then if it is to pluck, the finger is pulled off the string with the nail in contact with it. Often it is then held hovering near the string for a backstrike of it or moved straight onto an adjacent string whilst another finger will damp the string. This plucking by nail is very different from the 'swipe' action of plucking by finger.

The need for the anchoring and supportive features of the

closed approach is especially apparent when one considers the practicalities of performing on the harp whilst standing or walking. It is probable that this music (or a simplified version of it) was performed on procession. Apart from the King David icons, the Dynevor and Cotehele carvings depict this in secular contexts. Thomas Price[16] describes his experience of this prior to 1800:

> … Samuel Davies… … play before the Club whilst they walked in procession to Church. He carried his Harp slung about his shoulders so as to be able to play as he marched along.

Although the harp would obviously be elaborately harnessed, every detail of the closed approach that steadies the playing would be invaluable and possibly actually essential for ambulatory performance. It is hard to conceive of an open technique being successful here for the playing of sophisticated music.

This closed approach, then, has many ingredients which are highly distinctive. Chief amongst these is the covering-finger damping. As discussed above in connection with *taked y fawd*, it is clear from Bunting that this technique was not unique to this music, but had been used in conjunction with the nails in Ireland.

Having established the way in which covering-finger damping can be used throughout all the *plethiadau*, it is worth looking in detail at the evidence for a similar system in Bunting. The description of covering-finger damping quoted above in connection with *taked y fawd* gives us the clear impression that this was the essence of Hempson's technique, and indeed that its use was

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[16] Facsimile in Rosser, p. 3.

invariable, at least through his *staccato* passages. Yet in Bunting's tables of graces and shakes for the treble hand, only four out of the fourteen movements are specifically described as involving covering-finger damping; two of the other movements are described as involving same-finger damping; two more involve optional damping in an unspecified manner; and for the other six movements no damping whatsoever is expressly described. This is puzzling.

Also puzzling is the lack of practical logic in three of the four movements that do use covering-finger damping. In *leagadh anuas* and *barluith fosgalta* the damping cannot be done at the time indicated by the notation because the digit specified has to pluck another string at that time. In other words the verbal description of the movement does not match its notation. In *leath leaguidh* the second note to be damped by a separate finger is not a short note, it can be either a quaver or a dotted quaver; so the speed of covering-finger damping is not taken advantage of here, and it is hard to understand the reason for it.

These incongruities lead towards the conclusion that Bunting's descriptions and notations of these movements are faulty, which would be understandable if he had reconstructed them years after interviewing Hempson. There are other incongruities in the movements apart from these ones involving damping; perhaps the most striking is the discrepancy between *barluith* as shown in the table of shakes etc. and as shown in Bunting's transcription of 'Cooee en Devenish' from the playing of Dominic O'Donnell. (From comparison with *barlluith-beal-an-airdhe* it seems that it is the table that is in error here.)

Also it may have been that Hempson and O'Donnell were

unreliable authorities, in the sense that a once logical system may have become corrupted towards its end. Bunting expresses the sense of this when he writes that he perceived in Hempson's playing:

> … <u>vestiges</u> of a noble system of practice that had existed for many centuries. (my emphasis.)

This impression of vestigial remnants is reinforced by the use of some of the same Gaelic words in the terms of fingering movements in our earliest records of *piobaireachd* technique (see Cannon, pp. 105-107).

Given these problems of transmission in Bunting, it must be unsafe when reconstructing the movements of p. 35 to follow Dart in giving priority to Bunting over the MS. What has been emerging from the study of the MS. from Dart onwards is a system of fingering which has coherence and practical logic, whereas Bunting's fingerings have, on the face of it, neither.

Yet the fascinating fact remains that covering-finger damping is common to them both, and indeed it is peculiar to them both. This must have great historical significance, and it is one of the many key links between Wales and Ireland in early musical practice. (These are itemised in Part 1: METHODOLOGY & PROVENANCE.)

In such a context of close links, it may be valid and fruitful to attempt to reconstruct the movements of which Bunting's records are apparently vestiges, from our understanding of the fingering movements in Wales. This would lie outside the scope of the present work.

What is also significant here is that covering-finger damping was used in Ireland in conjunction with nail-technique on wire-strung harps. Damping is necessary on metal strings (unless

they are of very heavy gauge) to produce a harmonically 'clean' sound, as metal strings on early Irish harps have a long sustain. This is largely the result of the massiveness of the thick components of all early wire-strung harps (not a result of overall size - they were small harps). They were clearly built with the intention of producing a long sustain, to hold in the energy in the string and to release it slowly, not to throw it out instantly.

The easily-portable, light leathern harp with horsehair strings and brays used in Wales for accompaniment at least, is the opposite proposition: designed to be loud, with a resulting fast decay - much faster than modern wooden harps even. Damping is clearly unnecessary on a leathern harp. Here I emphasize that it would be insufficient to simply propose that the MS. text was played on leathern harps with damping. For this scenario it would be necessary to account for why the damping was necessary, or at least why it was desirable, and how it arose. The effect of damping is detectable (more so with brays than without, especially when played softly), but not sufficiently so to warrant its <u>development</u> on this instrument. It is on the wooden, metal-strung harp that damping is essential. This issue is discussed in Part 2: INSTRUMENTS.

On the metal-strung harp the *plethiadau* produce a crisp effect, resulting from the percussiveness of nails on metal and from the dampings, which are highlighted by the sharp contrast with the sustain of the undamped strings. 'Ticks' and 'clicks' as used in the poems to describe the sound of the *plethiadau* are very apt descriptions of the damped notes, and with these fingerings the speed implied by these words can be achieved.

In addition, it may have been that the tiny differences in sound which exist between different ways of fingering a figure were cultivated for their own sake. This is implied by Bunting's statement:

> All these graces, shakes, double notes, chords etc., had a different sound and expression, according to the method adopted in fingering, and in stopping the vibration of the strings.

In *cerdd dant* it may have been, then, that although it is entirely evident that the fingerings arose out of expediency, there were aesthetic considerations at work too. The text gives some support to this view; there are many instances such as 37.6.12 where *taked y fawd* is used quite comfortably in a fairly low position, but it would perhaps be more convenient to use *takiad fforchog*. Presumably in all cases where there was a choice of which of the two to use, the selection was made in favour of one or the other on grounds of sound quality. There is an audible difference between the two, *takiad fforchog* being the softer.

There is of course an enormous audible difference between a plucking and a backstrike, which actually dictates the accenting of many of the movements: a backstrike cannot be accented by pressure.

The whole of this closed, covered approach reveals much about the general aesthetic taste of the tradition. There are several significant points. The short, damped notes are produced by two actions (plucking and damping), whereas the more conspicuous and essential sustained notes are the product of a single action. In this sense the approach can be viewed as devoting more energy to minute niceties than to the main flow of

the melody. This view is reinforced by the cultivation of curiously minute variations to form such long pieces (discussed by Greenhill), as if the listener is tacitly invited to join in a 'spot-the-difference' puzzle.

The use of the term '*cuddiedig*': hidden/concealed (discussed above) in connection with the movements is a piece of essentially visual imagery. Indeed the closed, covered approach is a visual phenomenon as well as a musical one, for the hands mask the actions of the fingers, and all movements of the fingers and hands are so very restrained. On account of their aptness, one has to consider that Gerald de Barri may well have been describing this closed approach in such phrases as:

> … producing such a consonance from the rapidity of apparently discordant touches …
>
> … they take such secret delight and caress so sensuously, that the greatest part of their art seems to lie in veiling it …

In concluding this examination of upper-hand technique, it is very important to note that the movements, even before the accenting of them is brought into the picture, actually severely restrict what melody can be played. For example, this technique could not be used for a melody that involved the fast playing of two notes, the first more than a fifth above the lower, unless the first note is to remain undamped. This is because *taked y fawd* becomes uncomfortable beyond this range, and actually impossible beyond an octave: the forefinger and middle finger will not stretch to it.

The selection of a consistent plucking in the *plethiadau*,

(whether it be the first, second or, where there is one, the third note), as accented restricts things much further.[17] In fact the melodic options are so highly restricted, as evidenced by the widespread use of formulae, that if it were that any particular melody could be played using this technique, this fact would be very unlikely to have occurred by chance.

Following on from these detailed analyses of the movements, the formulae and transposable fingering patterns, it is of course possible to quantify the relationship of any melody to the kind of melody possible in this tradition. I have not come across any that approach closely enough to warrant analysis, including the melodies of the Lancashire hornpipes which otherwise relate quite closely to this music (see Part 1: METHODOLOGY & PROVENANCE and also Ward). The Edward Williams (Iolo Morgannwg) MS., B.L. ADD MS. 14970, is a conspicuous failure on these grounds.

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[17] In Part 6: RHYTHM, it is deduced that it is the second note which consistently bears the stress accent and coincides with the plucking of the lower hand. Confirmation of this is derived in Part 8: VERSE. For the sole discussion of the problem see Dowd (pp. 61-63).

VII. THE LOWER HAND

Chords

The lower hand is occupied mainly in playing chords, rather than movements and single notes as is the upper hand. The tablature does not supply the fingering of them, but as with chords produced by the upper hand the fingering is generally obvious. Again there is no practical obstacle in deciding which digit to use in most instances, and where there is ambiguity we have no reason to suppose it matters greatly which is used.

Never is the little finger required to pluck, as five-note chords by the lower hand are not used. Three note chords predominate, but often there are four-note chords, unlike in the upper part.

Heavy use is made of the thumb, exploiting the spread between the thumb and the fingers. As in the upper part, it is rare for the topmost string of a chord to be too low to be comfortably reached by the thumb. The three-note chords in *Kaniad Kynwrig Benkerdd* (46.4 f) are probably examples of chords where the thumb is not used.

The width of the chords tends to exceed those played by the upper hand, which is to say that the lower hand must have been really trained to reach wide chords. Here is the speciality of the lower hand, different from the speciality of the upper hand - the movements with covering-finger damping. It should be noted here that, as discussed above, the spacing of the harp-strings was very much narrower than on modern harps.

The chords span up to ten strings, for example 56.1.1. This is quite comfortable with the appropriate string-spacing. What is less comfortable is that on occasion the forefinger and ring-finger

of the lower hand have to span an octave, as at 60.1.1. The problem in such chords is not that the fingers need to be stretched but that the angle at which the forefinger and the middle finger have to be held in relation to the plane of the strings is very acute, which can lead to misplacement of these fingers or jarring of the strings below by the back of the nail. So the skill here is in locating the strings. It becomes apparent with experience that the string-spacing is at the optimum: the most narrow possible in order to allow wide chords, before jarring against adjacent strings becomes inevitable.

One feature that facilitates the use of wide chords towards the bottom of the range is the omission of an 'ee' string. As discussed in Part 2: INSTRUMENTS, no such symbol exists in the text (despite the claim of most contributors to the contrary), and there is no compensating duplication of strings (such as Bunting's 'sisters') either. This makes the bottom two strings - cc and dd - more accessible than they otherwise would be (see for example those at 64.6.).

From the standpoint of technique, the overwhelming feature of the lower part is the standard way in which the *cyweirdant* and *tyniad* chords relate to each other. It is that a string from the one family always has a counterpart in the other, which will be played by the same finger, as if each finger was perceived as contributing a separate 'voice' to the harmony. Commonly one, sometimes two digits do not move place as the text moves from one family to another, forming drones, whilst the other digits are moved to other strings within their reach, in fact usually to adjacent strings.

It is of course possible to evolve a plethora of such

relationships, and it is clear from the text that this had been achieved. It is not in the scope of this work to classify these relationships, but they are so fundamental to the idiom it would be very surprising if the tradition had no classification of them. And so similar are they to the relationships between the strings in the two columns of *cyweiriau* on p. 108-9 that it is scarcely credible that the *cywair* system was not this very classification. This direction is developed in Part 3: TUNING.

On p. 108 of the MS. the tables have been interpreted as tuning diagrams, but no commentator has ever explained why this interpretation has to be put on it, and I hold that for many reasons this interpretation cannot stand up as you go into the details - the deeper one goes into the proposition the more nonsensical it becomes. The tables actually appear to be examples of *cyweirdant/tyniad* relationships. By this I mean that from the left column the composer could select a *cyweirdant* chord, almost at will, but then having made this selection the *tyniad* equivalent would be set, determined by the relevant table for the chosen *cywair*. Certainly the note-relationships in these tables are like the *cyweirdant/tyniad* note-relationships in the music text.

Apart from this account of the relationships between chords, there is an indication that the chords as finger patterns had names (as are supplied by Bunting for harping in Ireland) in this fifteenth-century poem:

> Myfyrdawd rhwng bawd a bys,
> Mên a threbl mwyn â thribys.   Dafydd ab Edmwnd

where the compound noun '*tribys*' may refer to a chord or a *plethiad* produced by three fingers (or digits).

Also, it appears from one poem that in the 16th century at least, their component intervals were known by their cardinal numbers 'three', 'five' etc. corresponding to the ordinal numbers of the present system:

> Tri, phump, a deg, teg pob tant,
> Y cordia pob cyweirdant;
> Dau, pedwar, di-hap ydynt,
> A saith a naw sythion ynt:
> Ni cheir o'r rhain chwarae rhad,
> Na chywir dant, na chordiad.   Wiliam Llŷn

Perhaps this approach would have sufficed as a description of chords, but it is hopelessly inadequate in describing the complex relationships <u>between</u> them which are so fundamental to the use of the lower hand.

The greatest chord played by the two hands is on seven strings (56.1.13, 15). It was common to play chords of six strings between both hands. This is, incidentally, not wholly surprising in so early a tradition, considering that instruments of many open strings capable of being played in this way had been widespread across Europe for centuries - not only harps but some psalteries, the psaltery-harp and the bohemian wing. It is perhaps surprising that since eight digits were used for plucking there are no examples in the text of chords of eight strings; perhaps this would have been considered excessive, or too divergent from what was realisable on the *crwth*. Certainly the preference was for four strings, usually three in the lower hand and one in the upper.

As with the upper hand, the width of these chords is not so great as to dictate that they be spread in order to make them reachable. And again, if they were arpeggiated, this has not been indicated in the tablature, as the letters for their strings are

vertically aligned in single columns. This is a very important argument against arpeggiation, as the tablature is perfectly capable of showing spread and broken chords by the use of more than one column. *Ostinato* figures formed from the spreading of chords across multiple columns are widespread in both parts, and indeed much of the upper part can be seen as forming broken chords rather than a melodic line, as Crossley-Holland (1954, p. 399) writes:

> So closely are the melodies built up on the harmonic framework that it is not always possible to distinguish them from arpeggios and spread chords.

Not only is there no clear evidence that they were arpeggiated, it is hard to see how this could be done without destroying the impact of the movements in the upper hand. Any attempt to integrate the two would need to be so complex as to border on the ridiculous, and would most likely be unrealisable on the *crwth* and the *timpan*. Even if it were not for this problem the widespread and high frequency with which chords are used in the lower part would be alarmingly wearing to the modern listener if they were arpeggiated.

The adoption of arpeggiation would prohibit any possibility of delivering the poetry in rhythms that were imitative of those of the music text, which is otherwise established in Part 8: VERSE.

Notwithstanding this dearth of evidence for arpeggiation, several commentators and interpreters have adopted it to some extent, particularly for the full chords in the lower part. For example, Crossley-Holland (1942, p. 149) asserts that 'a prominent feature is the spreading of chords'; and Dart (p. 63) that

'three-note chords in the lower hand were undoubtedly arpeggiated *downwards*, as in the Irish harp.'.

It is possible to make out an argument for descending arpeggiation, prompted by Bunting's account of this technique. On p. 35 a <u>third</u> notation, in addition to the tablature and triangular notations, is introduced for the fingers of the lower hand. The notation is given in the form of a key (which is what is so lacking for the upper hand in respect of the triangular notation). It is a table of equivalence such that:

the thumb	=	unblocked rectangle with projecting lines
the second (digit)	=	blocked rectangle
3 (the 3rd digit)	=	o
4 (the 4th digit)	=	a

This could be interpreted as a temporal sequence, reading from top to bottom, indicating descending arpeggiation, but it is a thin argument.

This notation appears against the legend '*krychu y fawd*', after its triangular notation and again below the key for the lower hand, in the form of a grid of four adjoining rectangles with projecting lines, no doubt indicating the fact that *krychu y fawd* can be produced by the thumb of the lower hand as well as that of the upper. This notation should not be confused with the fencing in the text, nor with the sporadic occurrence there of the 'O' component of the digital notation. This third notation is not used in the text.

Perhaps it was designed to be used in the text, but it is easier to imagine that it was designed to illustrate a series of

movements by the lower hand, in the same manner as the triangular notation illustrates those of the upper. The author or scribe got no further than *krychu y fawd* and *ysbongk* (which is discussed below), but there was room for a list of movements below *krychu y fawd* on the page. Perhaps this space remained blank because there were no more movements by the lower hand. Or possibly the intention had been to illustrate the fingering of a range of standard chords from the lower part.

<u>Ostinato figures</u>

Distinct from the issue of arpeggiation, the composers in this tradition exploited the potential offered by chords to create a variety of *ostinato* figures by staggering the notes and varying the order of playing them, spreading the chords across several columns. The following five fingering patterns are used, each straddling two or more columns of text and repeated many times in succession albeit transposed onto different strings:

Ex.1	Ex.2	Ex.3	Ex.4	Ex.5
1	1	1	1	1
2	2	2	2	
3		3	3	
4	4		4	4

The same kind of *ostinato* chordal figures occur in the upper part, but less frequently. They tend to be combined with these figures in the lower part, dovetailing into each other in various ways; for example 29.2.7-29.3.6. This is a highly distinctive technique.

These *ostinato* patterns in the lower part provide the key to understanding the metres of the pieces that contain them, since

invariably there is a regularity in the correspondence between the patterns and the measures. This is that each unit of the measure is represented by a consistent and regular number of columns in the lower part - either two or four columns. In each passage the number of columns does not vary but remains constant, and this no matter whether the units are *cyweirdannau* or *tyniadau*.

If it were not for these *ostinato* figures it would be very difficult indeed to match the measures to the text in pieces where the measure is ascribed in one source or another, or to ascribe measures in pieces where we are not given the measure. This is because a regularity of correspondence between columns in the lower part and units of measures seldom exists elsewhere; instead the number of columns varies from unit to unit within a piece.

Expansions of chords

One of the main contributing factors to the apparent asymmetry of the lower part outside these *ostinato* figures is what we could term the 'expansions' of lower hand chords. This widespread phenomenon is indicated by a diagonal line connecting the lowest letter of a chord to the succeeding single letter (24.5.2 f). The two strings thus connected are always adjacent, the second being one string above the first. The movement always occupies two columns, which are usually adjacent but may be separated by as many as three columns in the upper part (53.2.9-13).

In the passages and pieces where it occurs, it is not applied to <u>all</u> the chords, but to every instance of a <u>particular</u> chord or type of chord (usually one of a pair). Allowing for the cases where it is obvious that the connecting line has been

mistakenly omitted, the totals for the chords involved are:

```
 146    32     26     26      9      2      1       1
 __            __     __
 b  d|  e| a|  g  d|  a  d|  d| a|  f| a|  f| c|  f| c|
 g  /   c| /   c| /   g  /   g| /   d| /   d| /   b| /
 c|     g|            c|            g|     b|
```

It is clear, then, that these expansions are triggered by <u>harmonic</u> criteria. Furthermore, they are clearly related to what we would call resolutions, in the sense that the lowest note of the first column is 'resolved' onto the note of the later column, which strongly tends to be more consonant with the sustained note(s) of the upper part.

Commentators have grappled with the problem of how the resolution is achieved, the commonest suggestion being that the string of the later column is simply plucked in its turn. This would not explain why the combination is highlighted by the diagonal line, however, and Polin suggests that it may have no more significance than as a guide to the eye. But this would not account for the <u>absence</u> of such guides in similar situations where two adjacent strings <u>are</u> plucked in succession.

The obvious solution is that the lowest string of the first column is damped, since this is the general meaning of oblique lines in the tablature (one line for each note damped, as we have seen). It must be significant here that the figure never occurs in four-note chords in the lower part, since this makes it possible to pluck the lowest string with the ring finger, then damp it with the same whilst the middle finger plucks the string above. This fingering is convenient and achieves a result which is harmonically satisfactory. The speed of covering-finger damping is certainly not needed here, since the figure spans two

to five columns. The fingering becomes: thumb (if three-note chord), forefinger and ring finger pluck the chord of the first column, then ring finger damps lowest string whilst middle finger plucks the string above.

Although it is very comfortably executed on the harp, such a resolution technique is not immediately suggested by the nature of the instrument; it appears to have arisen more out of a cultivation of dynamic harmony for its own aesthetic sake. We can speculate that it may yet have had an organological basis, as it is rather reminiscent of a slur and so it may have originated on an instrument with an unfretted fingerboard such as the *crwth*.

Although this interpretation of the expansion is very satisfactory harmonically, it does not resolve the greatest problem which the figure presents, which has been unnoticed by all commentators. This problem is so great that it threatens to overturn the basic assumption that the lower part is given in full (so unlike other records of early music where the lower part is so often omitted or abbreviated). It is that the expansion of these chords into two columns seriously unbalances the music <u>rhythmically</u>.

As different types of chords alternate with one another in complex patterns which often are not repeating, the circumstance that the expansion is applied to some chords and not to all of them usually results in an asymmetry, in the sense that a measured unit containing the movement will occupy one more column in the lower part than a unit without the movement. To the ear the rhythmic asymmetry is very marked indeed: the solitary resolution note stands out from the flow of the surrounding chords with an unsubtle stubbornness which is rhythmically jarring; and this is a fundamental problem - it is not simply remedied.

Very significantly, there are two areas in the text where asymmetry does <u>not</u> result from the expansion, as <u>both</u> of the alternating chords are expanded, rather than just one. In the *klymau kytgerdd* (24.5.1 f) what had been (earlier in the piece)

```
e| is expanded to e|  a|
c|                  c| /
g|                  g|
```

<u>and</u> what had been f| is expanded to d| d| so that both the

```
                    d|        b| c|
                    b|
```

cyweirdant and *tyniad* units still contain an equal number of actions in the lower hand. A similar equality exists at 90.2 to 90.4, except that both expansions are marked with a diagonal line.

These cases have the simple logic of symmetry to them, and, as examined in Part 1: METHODOLOGY & PROVENANCE, symmetry is taken to be a fundamental characteristic of the music as a whole. So, a simple solution to the problem would be the assumption that in those cases where the expansion results in asymmetry, the asymmetry is only apparent, not actual, and that the lower part has been abbreviated. The abbreviating principle here would need to be that both types of chord in these passages would be repeated but that the scribe does not bother to write out the chords a second time <u>unless</u> they are modified, and even then only the modified part of it. Such a simple expedient would save an enormous amount of labour.

Support for this abbreviation hypothesis is derived from the simple fact that on the face of it the lower hand appears as significantly <u>under-employed</u> relative to the upper hand. The number of columns occupied by actions of the upper hand is far

greater, and each of the many columns involving *plethiadau* involve a series of notes. The lower part appears very sparse in comparison. Now this could be a genuine feature arising from several possible explanations, but it would still remain an odd feature, especially as the lower hand would usually be, or always be, the <u>dominant</u> hand, capable of much greater activity.

The whole issue of the expansions and the hypothesis of lower-part abbreviation are investigated in detail in Part 5: METRE (pp. 88-91), where it is established that the apparent asymmetry extends to measured units in general. Since the issue of abbreviation does not bear directly on technique, here it is necessary only to emphasize that the interpretation of the lower part presents <u>greater problems</u> than does that of the upper part (despite the impression given by commentators to the contrary).

Melody

There are passages where the lower hand escapes from the chordality of standard chords and *ostinato* figures into a melodic mode. Usually these passages are accompanied by one of several single-line *ostinato* figures in the upper part which enable the attention to focus on the lower part. There are long examples following 51.4.7 and at 85.4. Usually the lower part becomes single-line, and the tendency is for it to be most convenient to play the line on one finger, moving the lower hand.

Outside of these contexts, single notes in the lower part tend to be parallel to the upper part (e.g. following 84.4.13), and again it is most convenient to move the hands.

Movements

Movements are not common in the lower part. There are 44 instances

of _krychu y fawd_, and these usually have a blank upper part above them, but they can have *plethiad y wahynen* (14 instances) or *krychu y fawd* (1 instance) above them in the upper part. Interestingly, unlike many of those in the upper part, none of them are supported by any notes below, played by the fingers. This means that each of them could be merely a backstrike, whereas in the upper hand those above notes plucked by the fingers must have at least one pluck to be practicable. However, 25 instances of the movement in the lower hand have no adjacent pluck of the same string, and so the logic of the pictograph dictates that a pluck as well as a backstrike must be denoted by the symbol in these cases.

There are 8 instances of the 'Z' movement (58.5.6-58.6.5), on low strings most accessible to the ring finger. They are in series with each other. With such a rare movement, it is not really credible that the ring finger of the lower hand would be specially trained to execute a very rapid *tremolo*; the movement must be a fairly slow back-and-forth movement. This may have implications for the execution of *krychu y fawd* by the lower thumb as well.

A family of symbols exists, with a short '/' in combination with a single letter in the lower part. The position of the stroke varies: it can be centered above the letter (64.5.5-17, 72.2.5-72.3.5), or more commonly above and to the right of the letter (57.5.3 f).

When the '/' is centred above the letter (12 instances), the following column contains the letter for the string above, so it must be that the stroke is designed to draw the eye to this. This clearly relates to instances of the same in the upper part (60.4.10-62.1.10),

discussed above under *y plethiad byr*. This complex of symbols would make most sense if it were to indicate less rapid versions of *y plethiad byr*, because they are spread over two columns not one. This makes it is conceivable that a damping of the first, lower string could be achieved by the lower hand if the movement is not quick, since same-finger damping could be used. There may even have been time to make the first note *staccato*, and it is convenient and practicable to perform all three actions with the thumb or the forefinger.

When the '/' is above and <u>to the right</u> (14 instances), it matches the quote on p. 35 of the tablature notation for the movement *ysbongk*. The fingering notation for this is provided on the stave to the lower right, slightly misaligned with the tablature quote. It shows what probably is four quotes, two with the forefinger (blocked rectangle) and two with the thumb (unblocked rectangle), each with a slash through them.

Ysbonc means a jump / bound / spurt / leap / stroke. Dolmetsch and Schaefer interpret it as a single note plucked by the forefinger and damped by the thumb; Dowd and Polin as a *sforzando* note; Dart as a single damped note, plucked and damped by either the thumb or forefinger; Ellis (1991) as two adjacent notes plucked with the forefinger.

Only in one instance (84.2.3) is *ysbongk* followed immediately by an action of the lower hand in the next column, and in this one case it looks from the context as if a *plethiad* of the upper hand has been omitted. There is, then, considerable space following the pluck of the string, in which it could be damped. It would seem that the movement should be interpreted the same as those where the stroke is centred above the letter, but without a following pluck of the string above. Thus here the note

would be *staccato*, quite detached from what would follow, and this would adequately account for the name *ysbongk*. As the fingering notation does specify, either the thumb or the forefinger <u>are</u> available for plucking, and the damping could be same-finger on the example of the 'centred' two-column movement.

Evidently detachment was a quite rare special effect - note that there are only 84 instances of *tagiad dwbl*.

The <u>quadrant-and-dot movement</u> occurs 4 times in the lower part, at 38.1.14, 38.3.24, 38.4.18 and 59.3.5. In each case it follows a pluck of the string above, just as it does in the upper part, where it always follows *plethiad y bys bach*. This reinforces the argument for the movement as: forefinger plucks as thumb damps the string above. Because two columns are involved here there is no reason to suppose this follows on particularly rapidly from the pluck of the string above.

VIII. HAND POSITION

An outstanding feature of the text in general is the economy of hand movement. With the upper hand, we have seen how all the movements are dictated by the logic of convenience, and an important part of this is the evident need to keep shifts of hand to a minimum. This is particularly apparent in the substitution of *taked y fawd* by *hanner krafiad*. Generally, what is usually a fairly compact melody line combines with the supreme convenience of the way in which it is fingered so that shifts of hand position are kept to no more than one string's distance. This is largely the product of the standard formats in which the movements are juxtaposed.

Such economy is an astonishing and peculiar feature of this music. It arises of course out of the double-tonic principle of adjacency which pervades the music, and also from the 'one step at a time' way in which the principle is implemented. It is almost as if economy of hand-position on the harp has shaped the music, resulting in a truly instrumental music that has nothing to do with imitating vocal music. It is unlikely that the music evolved on the harp, but it is apparent that it is dominated by instrumental expediency. It is very much a craft of strings (*cerdd dannau*); they were not concerned to make their instruments 'sing'. This is examined in detail in Part 9: EXPRESSION.

Where large shifts of hand position do occur, the almost universal tendency is for this to happen between passages or sections.

Virtually fixed hand-position also underlies most of the wide and high passages, for in these there are chords and movements that involve a wide spread between fingers and thumb.

Here the hand does not move up to accommodate the high notes, it is the palm that opens out to allow the thumb to move up. In the thumb variants of movements, where the thumb substitutes for the forefinger, the hand is able to keep to its low position. So usually those passages that give the ear the impression of great melodic mobility are in reality built on a very compact range of strings under the fingers whilst a separate 'thumb line' is established high above. The hand position is able to remain almost constant. It is almost as if the impression of dynamism is illusory.

A high position of the upper hand is seldom adopted. The highest strings, f and g, are only used, and briefly at that, in two pieces, at 94.5.7-94.6.16 and 98.5.17-98.6.3. Most commentators have been unaware of their existence.[18] As finger movements are involved here and not just the thumb, the hand has to be very high here, its palm curving round the curved surface of the upper end of the sound-box. This curve permits the hand to move in towards the strings, and combined with the off-setting of the top six or so string-holes it allows the fingers to strike these very short strings in the usual manner whilst maintaining the standard hand posture, otherwise this would not be possible.

The lower part is of course absolutely pervaded with the principles of double-tonic adjacency and drones. Such parallelism as there is is usually in single steps to adjacent strings. Economy of hand movement is even more pronounced here than with the upper hand.

It is to be noted that all this is as far removed from the

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[18] Thomas, Gwynn Williams (p. 34) and Dart do notice the f string. Dart notices the g string but confuses the octave marks of the 'g's in the higher three octaves. Travis (p. 4) notices both but does not specify their octave marks. Whittaker (p. 15) notices both.

flamboyantly mobile, sweeping *glissando* technique of later harp-playing as it is possible to imagine. In turn this implies that any conception of this music as involving the kind of ornate decoration that is to be found in Baroque music is faulty.

The standard relationship between the two hands is for the upper to be centred a little more than eight strings above the lower, with the bottom edge of the upper hand at about the same vertical height as the upper edge of the lower hand. This is not only entirely comfortable, it is the relationship which, when the two parts are at their standard heights, enables the digits of both hands to pluck their strings around their midpoints. When the upper hand is covering higher strings it is forced to pluck above the mid-points, and the reverse is the case with the lower hand. This point obviously relates to the quality of sound-production.

There is of course no difficulty in <u>overlapping the hands</u>. These are the locations of the first overlappings in the eight pieces that contain them: 23.5.1, 28.6.5, 30.6.9, 40.5.9, 59.2.1, 67.6.8, 69.5.8, 87.6.3. The tendency is for the technique to be used in combination with *ostinato* figures in both hands, but there is a wide variety of styles of overlapping, which shows that it was an established technique.

Extraordinarily, there are some cases where a string is duplicated between the two parts, in a single column. An example is at 63.3.2 on a c string. This may well be a mistake in the sense that the c should have been omitted from one of the parts. It is not credible that the harp would have had a double row of strings, and it is not possible that two strings should both be designated by the same letter since the logic of most of the *plethiadau* on these strings would break down.

There is, actually, no problem in simultaneously plucking a string with both hands, and on occasion there may be advantage in doing so, not acoustically but in order to preserve already established fingering patterns. A case where this may be so is 49.2.16-49.3.5 :- although elsewhere in this piece the top string of the lower part is abandoned in occurrences of this passage. It may well be, then, that all such duplications are errors. If they are not, they are strong indication that the lower hand did not arpeggiate chords, because in practice one of the plucks of the string would be a muted 'dud' no matter which order it was plucked in.

Reversal of the hands, the lower playing above the upper, occurs in two pieces, at 60.3.1-60.5.8 and 74.2.1-74.6.7. Here there is not the variety of style that is found in overlapping technique, there is just the reproduction, in reverse, of the standard style of mainly single line melody with chordal accompaniment. It is evident from the title of the first piece that this technique was termed '*chwith*': left /wrong /sad /strange /awkward.

The accompaniment chords do not exceed three notes, and the highest has the thumb of what is normally the lower hand plucking the c four strings down from the top string. Such chords are actually very accessible to this hand and can be plucked centred on the midpoints of the strings. The forearm is held close to the chest.

The other hand descends as far as the b five strings above the bottom one. Again the position is entirely comfortable and the strings are struck around their midpoints.

In both pieces the reversed hand passages are consecutive

and span beyond a single section; they cover substantial portions of the pieces. There are only four places in total where the hands exchange position: at the beginning and end of the reversed portion in each piece. Both examples include restatements of earlier, unreversed material, slightly modified.

It is surely very significant that in these respects the technique is used in the same sort of context as that described by Bunting in his commentary on Port time[19]:

> "Phurt" frequently consisted of two parts; first, *Na phurt*, introductory, and *Malart Phonck*, changing the position of the hands, the right hand playing the treble, and the left the bass.

It is interesting that the examples of *malart phonoch* which Bunting provides:- an express quote in his table of fingerings and two more in the piece Cooee en Devenish, and unnamed examples in Port Gordon (Purth Clarsearch) etc. - do not fit the above comment. The examples are tiny, stretching to a bar at the most, rather than an entire second part. They appear to be mere tokens of the technique he describes.

So it seems that Bunting was better informed verbally here than he was by musical illustration. We have already seen a similar picture emerge in respect of covering-finger damping. When we also take into account the absence in the music text of a string for ee in the bass (surely related to the absence of an f string

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[19] See Sanger and Kinnaird, pp. 174-176, for a discussion of the general characteristics of Ports. No extant pieces are constructed as Bunting describes, and they have little in common with the music text. One has to wonder if the Ports described by Bunting were in fact a different species from the extant pieces bearing that title, but that all of them shared a Scottish origin.

in Bunting's tuning) it looks indeed as if Bunting's own impression that he was dealing with 'vestiges' is correct, and that we have access here with the music text to something rather closely related to what had been virtually lost in Ireland: 'a noble system of practice that had existed for many centuries'. This is examined in Part 1: METHODOLOGY & PROVENANCE.

IX CRWTH TECHNIQUE

The relevance of the *crwth* and the *timpan* is examined in detail in Part 2: INSTRUMENTS. Putting it briefly here, as the tablature is of music arranged solely for the harp, to recover the music it is simply not necessary to deduce how it was played on other instruments. However, if it cannot be demonstrated that substantially the same music <u>was</u> played on other instruments, then there is no possibility of referring to other instruments for help in reconstructing the music. And as it happens there are a few areas where it is helpful to do just this (the issue of arpeggiation is one such). Therefore it is worthwhile to explore some of the possibilities as to how the *crwth* and *timpan* could have been used to produce this kind of music, acting as solo instruments in their own right and not as accompanying instruments.

At the outset, it is important not to assume that there has been a single universal technique for the *crwth*. Just as the *cerdd dant* technique for harp has little in common with harp techniques in folk traditions, including within Wales, we have every reason to make a clear distinction between the use of the *crwth* in the *cerdd dant* tradition and in folk traditions. It is usual for *crwth* (/crowd) technique to be considered in the latter context - see particularly Remnant, p. 42ff. For the collated Welsh material on the *crwth*, including that from the *cerdd dant* tradition, see Miles.

The technique whereby music of this nature could be achieved on the *crwth* is extremely problematic. Usually what may have been played or playable on it has been approached from the basis of what little we know about the instrument, its tuning and

technique, and much of this information probably has its origin in the folk tradition. It is not surprising then, that the result does not come close to what is required.

The immediate, great problem is how such full harmony could be achieved on the *crwth*. On one hand, as the instrument has only six strings whereas the text has chords of up to seven notes, harmony this full cannot be achieved. On the other hand, the conception of medieval bowed instruments as sounding, at the maximum, melody with parallel organum and drone, is clearly inadequate.

The essence of the music is its sophisticated vertical harmony, resulting from the contrast of melody against the oscillating chordal background of the measures. This is really a figure and ground relationship, but one where the ground as well as the figure is in a state of flux. Parallelism is not a widespread feature, and drones, although common, are not fundamental to the harmony in the way that the double-tonic oscillation is.

The realization of these fundamental components on a bowed instrument is a very different proposition from the mixture of melody and parallel organum and drone supplied by folk traditions of bowed instruments in Europe and Asia. As with the harp technique, we have little or nothing to learn from other traditions.

So, how could the *crwth* have been used to its greatest effect in this tradition? It is helpful to think of the music in three components: the melody, the alternating accompaniment of the measures (usually involving the double-tonic), and the optional drone(s). These are really three kinds of 'voices'. Let us consider the options for producing a single line melody.

This could be by the hand in 'first position', with the fingers stopping the notes on the four strings over the fingerboard, with the strings very possibly in two paired courses. The compass would be very restricted here. If the strings could be accessed individually or in pairs then the melody could be played, but the other two or three strings are sacrificed so that we only have the thumb strings to provide a thin harmony.

Alternatively, if the strings were in a flat plane, sounding together, then the 'residue' of the strings other than the 'melody' one becomes problematic; it is difficult to imagine a tuning that would be satisfactory harmonically, and whatever the tuning of them the residue would form a drone effect.

But there are more options if the hand could shift position, as perhaps significantly the finger-board is long enough to allow this (on many types of medieval instrument it is not).[20]

One proposition here would be that the thumb produced the melody on its strings, perhaps stopping with the nail. But it is not really credible that the thumb could have the mobility to produce melody of these dimensions whilst hampered by the need for the fingers to stop their strings to create something other

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[20] The mobility required of the hand if it goes beyond first position suggests the instrument may well have been slung horizontally using a strap (in the manner of the Cotehele Tester and as was often the case with fiddles, as collated by Bachmann pp. 87-88), rather than played on the lap and supported by the shoulder. In turn this dictates overhand grip of the bow. The Cotehele Tester, although defective, would have shown this originally, and surely that the long bow was end-gripped. This in turn strongly implies hand-regulated tension of the bow-hair. Shifting hand-position does not dictate that the instrument was played standing or sitting (although it is not credible that the etiquette of this tradition would involve any musicians other than the *datgeiniaid* standing, except in processions).

than a drone. It would be impractically complex.

Another proposition would be that the melody was confined mainly to a single string, or a course of strings, and that the alternating accompaniment was provided by the thumb alternately plucking its two strings which would not be tuned in unison. Any drone would be supplied by the 'residue' of the bowed open strings, and if there were no drone then the residual strings would not be bowed a large part of the time. In this last case an imbalance would be created between those chords which included these strings being bowed and those which did not. Although it is not very satisfactory, this is at least a possibility.

Another possibility with using different hand positions is that the melody could be played by the fingers stopping just one of either pair of coursed strings at a time, whilst the other pair is unstopped. If the two courses were not in unison, an alternating accompaniment would then result from the open strings by the fingers being moved off one pair onto the other. In effect each course would have two rôles: as melody strings and as accompaniment strings, and these rôles would alternate with each other.

I will illustrate this suggestion with a simple extract from the text (26.4.22-27):

```
              e̅  f̅
         d̲         e̲
     c̲                 
    c                   d
    e|          f|
    c|          d|
    g|          b|
```

Now suppose, for the sake only of this particular illustration, the tuning:

```
6   5   4̲   3̲   2̲   1̲
c|  d|  g   g   b   b
```

The c d e are stopped on the first course, both strings of which need to be tuned to b. Meanwhile the second course is open, sounding g, and the thumb plucks one of its strings, sounding c. Then the f e d are stopped on the second course. Meanwhile the first course is open, sounding b, and the thumb plucks the other of its strings, sounding d. What is achieved here is:

```
           ‾    ‾
         e    f
     _       _
      d          e
   _            _
   c              d
   g          b
   c|         d|
```

This is not as full as the harmony of the harp extract, but it does adequately achieve the alternating accompaniment:- it has escaped from parallelism. The loss of fullness could be compensated for by the strings in each course being doubled at the octave rather than being in unison, and by the thumb strings being in unison where a drone is allowed.

In theory this method must be about as close as is possible with conventional stopping to exploiting the maximum potential of the *crwth*, since five or six of the strings are sounding simultaneously in a way which goes beyond parallelism and drones.

This depends on a straight bridge, as described by Barrington, and on the pairing of strings in courses. They would not have been in courses if Gruffudd ap Dafydd ap Hywel is to be taken literally in describing each of the four fingers as controlling a single string:

> Tant i bob bys ysbys oedd
> A deudant i'r fawd ydoedd.

But this may have been just a poetic way of saying there are four strings which are fingered.

Note that a large number of scordatura have to be involved

to realize this potential for full harmony, because of the wide variety of harmony in the text. Indeed any method of playing the *crwth* that is going to remotely resemble the text will need to take advantage of extensive scordatura. We are, then, far from being in a position where we can say: such-and-such is <u>the</u> tuning of the *crwth*, or even its main tuning. The feature that most tunings would have in common is that both finger courses would not be tuned in unison. Usually, to accommodate the double-tonic, they would need to be a tone apart, as they are in Jones and Barrington; a fifth apart as in Bingley would be unnecessary.

It would be a major project to work out the optimum tuning for each piece, given that the fingers have to negotiate swapping courses in a way which is melodically satisfactory and that they have to be capable of executing these melodic lines on one course at a time. It is helpful here that the melodic line is already broken up into its short *plethiad* components of usually two or three notes, and this may result from the constraints of just such a *crwth* technique of shifting hand position, stopping one course at a time. *Crychiadau*, if they were not rapid tremolos, could be easily achieved by bowing strokes.

The Cotehele carving does not confirm this method of shifting hand position; the hand is in first position, with fingers covering each of the three strings simultaneously. However, for what it is worth, the 1742 Voelas *crwth* was played with shifting hand-position, as the fingerboard has wear-marks along its length. But this could well be a borrowing of fiddle technique, as shifting had become established on the fiddle by the end of the 17th century.

Also it should be noted that this method does not

immediately unravel the most enigmatic expositions on fingering and tuning the *crwth*, particularly the passage on playing the eight primary *cyweirdannau* and the eight primary *tyniadau*[21]. If we had a clear understanding of these two terms there would be some possibility of progress here.

As discussed in the chapter on terminology and in the following chapter on the *timpan*, the two terms may well have originally referred to the notes produced on the open and stopped strings of an early instrument. This explanation is entirely adequate in accounting for the continued use of the two terms in the context of the alternating chordal accompaniment of the measures, on an accompaniment instrument. But with the music in a later stage of development, on the *crwth* and with the addition of a melody line, this supposed original concept would have needed to be developed. There are three possible directions here.

There must surely have been a term for stopping instruments such as the *crwth*, and the only two contenders are '*tyniad*' and '*lleddfon*', which does not have a counterpart word to describe open strings as '*tyniad*' has *cyweirdant*'. An alternative to this, or in addition to this, is the possibility that '*cyweirdannau*' and '*tyniadau*' refer to first position and to higher positions respectively. A third possibility is that the two terms refer to the stopping of the two bowed courses of paired strings alternately - the shift from *cyweirdant* to *tyniad* might be the shift of hand-position across the fingerboard from the outer course to the inner course.

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[21] Printed in *The Myvyrian Archaiology of Wales*, 2nd ed., p. 1206 and p. 1071. Although the details continue to be obscure, the passage does give the impression that there were <u>two</u> ways of producing each of the notes of the diatonic scale, and perhaps one way was on one course and the other way was on the other course.

From these suggestions, there is some possibility of translating the accounts of fingering technique into practical action. But when the formidability of this is taken together with the Gruffudd ap Dafydd ap Hywel poem, which speaks of the hand producing a hundred sounds or voices from the six strings,[22] it does seem that there is some vital information or understanding that we are still lacking.

This may be supplied by the special property of bowed horsehair strings which has not been commented on before in relation to the *crwth*. The strings are capable of producing the note a fifth above that which is stopped, by stopping the string lightly. This capacity to produce overtones is a product of the braiding. The technique is difficult to control but is used effectively on the Dolan *ghijäk* in Eastern Turkestan, where first position is in effect transformed into fifth position.

If this technique of varying the intensity of finger-pressure was used on the *crwth*, then the capacity of the instrument is so extended that certainly it would be capable of achieving a compass and an alternating chordal accompaniment to measure up to those of the harp. And given already that the instrument sounded plucked notes and sympathetic resonance from the thumb strings in addition to open and stopped notes from the bowed strings, we should not be surprised if the silvery tone of bowed harmonics was present too.

It would be a huge task to work out the practical details of fingerings and tunings to realize this. Nevertheless, the technical possibility that the basic components of the

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22   Chwe' thant a gaed o fantais,
     Ac yn y llaw yn gan llais;

alternating harmony are realisable on the *crwth* is important. It means the nature of the *crwth* does not compel us to assume that the music in the MS. is idiomatic, that it is peculiar to the harp. On the contrary, we need to examine any proposal about the music intabulated as to its feasibility on the other instruments.

The evidence then, is against the use of *glissando*, *tremolo* and *arpeggio* techniques on the harp.

X. TIMPAN AND LYRE TECHNIQUES

As discussed in Part 2: INSTRUMENTS, it has not been possible to really narrow down the precise characteristics of what was meant by 'timpan' in general, let alone in a *cerdd dant* context. This means that there is little to be done here except to specify what would be required of it.

The accompaniment aspects of the music - the alternating harmony of the measures and occasional drones - could easily be supplied by a six-stringed lyre using either of the usual lyre techniques: plucking and damping-with-strumming.[23] For example, the *clymau cytgerdd* chords could be realised with a tuning:

f| e| d| c| b| g|

The plucking technique would use three digits to pluck the e| c| g|, then shift one step to pluck f| d| b|. The strumming-with-damping technique would realize the two chords in the same order by using three digits to damp the f d b strings, then shift one step to damp the e c g strings, the other hand strumming all the strings with a plectrum or the nails.

It is interesting that six strings is the number indicated by the remains of the Abingdon, Taplow, Sutton Hoo, Oberflacht, Cologne and Kravik lyres, by nearly all of the recovered lyre bridges, by the Canterbury Psalter lyre, and by Gille-Pádraig of Dublin. In theory, the harmony of *cerdd dant* needs to be added to the drone and *organum* models of the harmony hypothesised for these instruments, for they would be perfectly adequate if used

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[23] As still used on the *tambour* in Sudan, and the *krar* and *baganna* in Ethiopia. For a recent discussion of ancient Greek lyre technique, see West pp. 64-70. Note that on these instruments the general dynamism, the loud percussion of the sounding of damped strings, and the vigorous strumming with heavy plectra all seem inimical to the music in the MS.

to provide an <u>alternating</u> accompaniment to the voice or even to an early, small harp, itself providing the melodic line.

The accompaniment aspects could also be realised perfectly well on the three-stringed end-stopped lyre, as illustrated in the Winchcombe Psalter. The stopping is heavily restricted on both this instrument and on its *crwth*-like, four-stringed, bowed companion, by the length of the fingers as they are curled over the yoke. We can be fairly certain here that the strings <u>are</u> being stopped and not damped as the '*crwth*' is bowed; presumably the yoke is shaped to provide a limited fingerboard.[24]

Such a very restricted 'first position' could not result in the raising of the pitch of a string by more than about one and a half tones, but again the alternating harmony is realisable. For the same example as above, the tuning of the lyre would be:

e| c| g|

with the two chords played simply on the open strings, then stopped to f| d| b| respectively. In this manuscript drawing the lyre and the '*crwth*' are apparently providing a chordal accompaniment for David's harp of few strings, and this accompaniment must be the alternating of two chords composed of adjacent notes (or nearly adjacent notes).

So the model for the harmony aspect of the music of these instruments is provided by *cerdd dant*; neither a drone model nor a simple, parallel *organum* model can account for the technique of these instruments. This match is unlikely to be coincidence, and

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[24] Interestingly, there has been debate over whether the Classical *lyra* and *kithara* were played in this way ever since Curt Sachs reported the contemporary practice of stopping without fingerboards in 1913. It is of course possible that the Winchcombe artist was just incompetent.

it is hard to imagine the contrasting terms '*cyweirdant*' and '*tyniad*' originating on any instrument but these end-stopped ones. But as end-stopping is incapable of providing the melodic line as well as this accompaniment, the *timpan* of the later *cerdd dant* tradition is likely to have been an instrument of more sophisticated technique.

If indeed it was an instrument of few strings, it would be necessary that at least one could be stopped over a wide range by some technique. Merely three strings would definitely be incapable of providing the fullness of harmony required here, and notices of the *timpan* as three-stringed must refer to a precursor. Anything from four to six strings would be adequate for the kind of techniques discussed above for the *crwth* (except overtones), as long as the strings were capable of being strummed or plucked together. It may be significant that the 'crowd' in the MS. at Durham Cathedral Library is not depicted with a bow.

However, it does not seem very probable that the *timpan* would take a form or a technique that was similar to those of either the harp or *crwth*, else it would not bear its own name. After all, the harp and *crwth* are very different from one another. So it is worth considering if there is another combination of instrument and technique that would suit this music.

A combination of a stopped melody string and <u>two</u> sets of 'drones' where each set could be accessed independently of one another would be quite adequate. The stopping of the melody string would need to be possible over considerable length to achieve the necessary compass. Each set of drones would need to comprise at least three strings to match the fullness of the harp chords. The sounding of these sets alternately, in combination

with the melody string(s) could be realised on a strummed instrument if they were positioned on either side of the melody string. There would need to be many tunings for them, including some with a string from each set tuned in unison to form a drone.

The form of such an instrument could possibly be zither-like, similar to the Icelandic *fidhla* and *langspil*, or, more probably, be lyre-like, similar to that in the miniature from the Bible of Charles the Bald.

There are, then, several techniques and several forms of instrument which could quite credibly have been sophisticated enough to replicate most of what the harp was capable of. As with the *crwth*, we have no reason to suppose that arrangements for the *timpan* would have been very different from these for the harp. In turn, it is implied that the music intabulated is not idiomatic to the harp.

If the *cerdd dant* tradition was the inheritor of strumming techniques on the lyre or the *timpan*, then the effect may have been imitated on the harp by arpeggiation, but as discussed above it is hard to understand how this could have been combined with the *plethiadau* in a satisfactory way.

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APPENDIX

SUMMARY OF MOVEMENTS

Here are given the fingering and string-pattern details for the movements. The frequency counts are after adjusting for the emendations given below.

The fingering patterns as established above are denoted: 1=thumb, 2=forefinger, 3=middle finger, 4=ring finger, 5=little finger. The top row denotes the striking digits. The symbol "$^{/}$" following a number denotes a backstrike, with the back of the nail, by the digit numbered. The symbol '...' shows the position of possible additional strikes of the same string in *crychiad* movements (there must be at least one additional strike where the *crychiad* symbol in the text is not adjacent to a pluck of the same string).

The bottom row denotes the damping digits where appropriate; any strike of a string which is immediately damped has the damping digit shown below in the same column.

The string pattern is shown in order of striking, counting upwards from the lowest string of the movement as 1. '-' denotes a range of options.

Rank	Frequency	Description	Fingering pattern	String pattern
1	1,179	*taked y fawd*	2 3 1	2-5, 1
2	878	*y plethiad byr*	3 2 4	1, 2
3	563	*plethiad y wahynen*	...3$^{/}$...	1
4	379	*plethiad y bys bach*	3 2 1 4 5	1, 2, 3-6
5	345	*krychu y fawd*	...1$^{/}$...	1
6	226	*plethiad y pedwarbys*	3 2 4 1 4 1 3	1, 2, 1, 2-3
7	213	thumb variant of *y plethiad byr*	3 1 4	1, 3-8
8	154	*hanner krafiad*	3 4 5	2, 1

9	148	*plethiad mawr*	3 2 1 4	1, 2, 4-7
10	84	*tagiad dwbl*	2 3 1 2	2, 1
11	80	*ysgwyd y bys*	...2$^/$...	1
12	74	*ysgwyd y bys + plethiad dwbl*	...2 3 1 1 4	2, 1, 2
13	72	*kefn ewin*	3$^/$ and 2$^/$ and 1$^/$	1
14	71	*krafiad dwbl*	2 3 4 1 2	3, 2, 1
15	67	*tafliad y bys*	2 3 2$^/$ 2 1	2, 1, 1, 1
16	47	*takiad fforchog*	2 4 1	3-4, 1
17	42	quadrant-and-dot movement	(1) 2 1	(2), 1
18=	41	thumb variants of *plethiad y pedwarbys*	3 1 4 1 4 3	1, 3-6, 1, 3-5
18=	41	'Z' movement	...4$^/$...	1
20	30	thumb variant of *krafiad sengl*	3 4 2 1 5	2, 1, 3, 5
21	22	*plethiad y bys bach + krychu y fawd*	3 2 1 1$^/$... 4 5	1, 2, 3, 3
22=	14	*krafiad sengl*	3 4 2 5	2, 1, 3
22=	14	*ysbongk*	?	1
24	11	four-string variants of *plethiad y pedwarbys*	3 2 1 4 1 4 3	1, 2, 4-5, 1, 3-5
25	4	thumb variant of *hanner krafiad*	3 4 1 5	2, 1, 5-8

26=	2	*plethiad y pedwarbys + krychu y fawd*	3 2 4 1 1$^/$...	1, 2, 1, 3, 3
			4 3	
26=	2	column of dots	?	2, 1
26=	2	\' movement	2 4	4, 1
			1	

EMENDATIONS

The following emendations arise from considerations of fingering, rather than from harmonic and melodic considerations. The locations are followed by the emended reading. In most cases the emendation is both prompted and supplied by both the theory of fingering and the context in which the error occurs in the text. The more complex ones are discussed in the main body of this text. All counts have been performed after the emendations have been implemented.

They affect 110 columns and so constitute an error rate of less than 1%.

```
15.6.18          .\
16.2.4           / over f over d
16.2.6           .\
16.3.16          / over f over d
16.3.18          .\
16.5.4           / over f over d
16.5.6           .\
16.6.19          / over f over d
16.6.21          .\
16.6.22          \
17.2.16          / over f over d
17.2.18          .\
17.2.19          \
17.3.9-11        g g g
17.4.18          |
17.4.24          / over f over d
17.4.26          .\
17.5.25          / over f over d
17.5.27          .\
20.3.24          \\ over e over d over c
21.1.23          +
22.3.19          takiad fforchog
22.4.6           //
25.3.2-25.4.18 / over e over c
36.2.16          krychu y fawd
37.3.7           \
43.2.4           plethiad y wahynen over g, then / over f over g
43.2.7,21,24  / over f over g
44.1.13          \
44.6.9 g         8ve higher than written
46.4.6 g         8ve lower than written
47.1.18          .\ over g over f
47.5.17          \
48.3.10          .\
49.3.19          +
52.2.21          \
53.2.16          \
54.6.24          \
54.7.2,4         /
```

```
54.7.18          \
56.1.0           ysgwyd y bys
56.6.15          \
57.2.5,7,12,14,16 //
57.3.14          /
58.1.18          \
59.1.5,6,9,10,13,14,17,18 ysgwyd y bys
60.1.16          / in lower part
61.1.2           /
62.6.14          |
62.6.15          blank
63.3.5           /
66.4.1           //
68.2.1           \
71.4.3           /
73.4.1           Z
73.5.8           Z
74.1.1           Z
74.2.10          Z
74.4.1           Z
75.1.13          .\
76.3.13          Z
78.1.13-14       \
83.1.8           /
85.5.7           /
85.5.8           \
85.5.9           /
87.4.1,16        \
91.1.18          \\
92.5.11-13,15-17,19 /
93.5.16          // over d over c over b
96.5.7,12        \
96.6.9           \
99.6.12          d 8ve higher than written
```