THE HOLLYBROOK HARP - The Harp of 'Robin' Adair of Hollybrooke, its construction, capability and history.

Michael Billinge, 2019

"And he often presents himself to my imagination, seated in the old mansion of Hollybrooke, with Robert Adair and the bold hunters of Kilruddery - himself no doubt one of them - singing, with the accompaniment of this very harp, those simple songs which are yet remembered, and give pleasure in the remembrance, not only in the locality that gave them birth, but even in distant countries that have little knowledge or conception of its beauty."
George Petrie, letter to Eugene O'Curry (c.1861) [1]

"And then, as we entered the spacious entrance-hall, he would show us the portrait of Robin Adair on the wall near the staircase. On the opposite wall there still hangs the old Irish harp, with its thirty-seven strings, which belonged to Robin, and which dates from about 1720."
"C.H.I." (1901) [2]

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Introduction

Between the years 2007 and 2012 I was fortunate to be able to undertake a detailed study of many of the old Irish harps at the National Museum of Ireland. [3] However it was only recently, when I was re-reading the observations made by Robert Bruce Armstrong published in his *The Irish and The Highland Harps* and compared these directly with my own notes, that I realised he had made a number of errors in his work on the Hollybrook harp. [4] Although few, some of these mis-observations are quite significant and I feel sure that had he realised them at the time it would also have affected his understanding of the harps construction. In light of this I thought I should write this new appraisal of 'Robin's' harp. Yet, in doing so I would not wish to give any impression that I

am trying to disparage Armstrong's work. He was generally a meticulous researcher and I suspect that the reasons he made these untypical errors was that circumstances did not allow him sufficient time to undertake a thorough inspection. [5] Armstrong's *The Irish and the Highland Harps* will always remain one of the most important sources of information on these old instruments.

Note. Despite these few errors the vast majority of Armstrong's observations are perfectly valid, and as such there seems no point in me repeating all of them here within the body of this report. I shall therefore append a complete text copy of his piece on the Hollybrook at the very end of this work for ease of reference.

Construction

Soundbox

Armstrong opens his account of the Hollybrook harp with the following statement:

"This Harp is unlike any of those already described, and is the only known specimen of considerable antiquity the box of which is not cut out of a solid block."

At the time he wrote these words he no doubt understood this to be the case, but such is irony that only a few months after publication he was to become aware of another - the O'Conor/Carolan harp at Clonalis House. [6] Since then many more have come to light, and I am currently aware of seven extant examples that probably pre-date the 19th century (plus evidence for several others that are no longer extant). It would now appear that harps with constructed boxes were far more common than many 20th century scholars had appreciated. [7] Armstrong then continues:

"It is probable that logs of bog sallow were not obtainable within easy reach, and the difficulty of transporting a suitable block from a distance was so great, that the artificer was forced, in place of constructing the box of the instrument in the accustomed manner, to build or construct it out of several pieces."

Despite this conjecture, the soundboard of this harp would still have to be carved out in one-piece from a substantially thick slab of wood, and obtaining a piece of timber this size would likely have been just as difficult as obtaining one necessary for a complete box (which would have only needed to be a few inches thicker). Therefore any imagined difficulty in obtaining and transporting a suitable piece of willow is unlikely to be the reason for constructing the box in this way. He also seems to have assumed the harp's box would naturally be made out of willow, even though he doesn't specifically say so. Indeed since the surface of the box is heavily obscured by layers of paint it would be difficult to guess at the timber's identity, and it is not much easier when observing the inside either as here the surface is also masked by a thick layer of dust. However from what I could see there was nothing about the box to make me suspect that it might not have been made from willow and Armstrong's implied assumption would seem a reasonable one.

The cross section of this one-piece soundboard is slightly arched in form and incorporates a rebated curved fillet along either edge to take the sides of the box. However this section is not maintained throughout its entire length, for at the bass end - at a position that corresponds with the location of the forepillar - the centre part of the board was left extra thick to form a feature that could be described as a kind of internal plinth, or footing. [8] The timber was clearly left in place here to provide extra strength to the board at this crucial area of loading. As for the thickness of the rest of the board, Armstrong had measured this at the soundholes and states - "In thickness it is ¼ in., and in it are six circular sound-holes, 1 in. in diameter." This thickness is fairly typical throughout, though being hand carved it does deviate a little and, of course, it is much thicker near the edges where it is formed into the curved fillet shape. The main advantage in carving the board as a separate unit, as apposed to hollowing as part of a one-piece box, is that it provides the maker

with greater access and control over the final shaping of the board - thus giving him the ability to maintain the desired accuracy more effectively.

Armstrong had noted that a central metal strip had been attached to the soundboard, and also commented on the fact that the box had split along the line of string-holes:

"There is no raised string-band, but in place of the "shoes of the strings" there is a metal band ¾ in. wide, extending from the fore-arm to the harmonic curve. This band is pierced for thirty-eight strings, the holes being ⅛ in. at the surface and 1/16 in. next the wood. This metal string-band is certainly old, it is fastened by nails and is fairly strong, but not thick, and would not interfere much with the vibration; it, however, did not answer the purpose intended, as the sounding-board is badly split for some length along the string-holes."

Although there are thirty-eight holes in the strip the lowest one is not viable and so the usable number is thirty-seven - which matches the number of tuning pins in the neck. The split in the soundboard he mentions cannot be seen from the outside (being hidden beneath the string-band) but is visible through the large hole in the back board. His implied assumption that it was caused by the tension of the strings is quite likely, as this is where their force is concentrated, but the crack is a little wider than might be expected and it could be that timber shrinkage over the years has also added to this. Certainly a split that can be observed in the centre of the board at its very bottom end, beyond the forepillar, could not have been the direct result of string tension.

There is nothing complicated about the sides of the box, which are formed a little thicker than the soundboard, being typically about ⅜ in. thick. However, examining inside the box revealed what appears to be a piece of wood inset into the lower edge of the left-hand board at the bass end (faint traces of this may just be detectable in one of Armstrong's photographs too). Perhaps the most likely explanation for this insert would be that it was added to repair some damage that occurred to the lower corner of the harp during its life.

In describing the top (treble) end of the soundbox Armstrong stated:

"A block of wood 1 in. thick to which the sides were attached formed the upper termination of the box. A portion of this block, wedge-shaped in form, protruded from the termination of the box; to this the harmonic curve was fitted (Fig. II.)."

It is not entirely clear what he means here, but if the words "A portion of this block, wedge-shaped in form, protruded..." are taken literally then he appears to have made a mistake. For, on examination, what he seems to describe as a wedge-shaped portion of the top block appears to actually be a part of the end of the neck which had cracked and broken along the grain (I will comment further on this shortly). The assumption that this part of the broken neck is what Armstrong mistook for part of the top block is reinforced by his own drawing of (Fig. II) which would seem to confirm this error. Looking more carefully it can also be seen that this broken end of the neck had been snuggly fitted into a recess that had been cut in the top of the block for the specific purpose of providing a socket for the neck. It would seem that Armstrong had entirely missed this and, as a result, probably made the wrong deduction concerning the jointing of the neck and the box. However, there is still a further observation to be made here and this raises a question concerning the makers original intention for the positioning of this joint, for a little later Armstrong comments on the fact that it is offset from the centre:

"[it] does not rise from the centre of the box (Fig. II.), the measurement on the left side being 1⅝ in., while that on the right side of it is 1⅛ in. This arrangement allows the strings to be more perpendicular than they otherwise would be."

This in itself is quite correct, the neck is offset from the centre by the quarter of an inch that he states and this displacement would "allow the strings to be more perpendicular". However there is a possibility that the original intention actually was to have the neck located centrally in the top block. For looking very closely at the top it could be seen that the recess had first been cut a

quarter of an inch to the left (i.e. 1⅜ inches from the side). But this was then changed, for the socket was subsequently recut to the right and the resulting gap infilled with a small piece of wood which was then trimmed flush with the surface. There is perhaps no way of knowing whether the cutting of the recess in the centre had been the makers original intention or an unintended mistake, but either way it clearly was deemed necessary to realign the neck and bring the strings more upright. From my experience there are two main reasons why a maker might find it necessary to realign the neck in order to bring the strings more upright. The first is that if the obliqueness of the strings becomes too extreme then the string becomes more difficult to tune and may even, in the worse case, press against the bottom edge of the neck - thus rendering it unusable. [9] The second is that as the strings are bought more into a vertical plane they effectively become shorter and, depending on the shortness of the string and the original degree of obliquity, moving the neck over can potentially make a significant proportional change to the string length. This becomes especially relevant when the string is close to its critical length, for then even a small amount of shortening can make all the difference. [10]

At the back edge of the top block a short strip of brass was noticed. This was attached by a screw at the right side and there had likely been another screw on the left too, but this part of the block is quite decayed and so it is now missing. The piece of brass is unlikely to be part of the original harp and most probably was added as a mounting plate when the harp was prominently displayed hung high up on a pillar in the hall of Hollybrook House. The placing of the harp in this "honoured place" (to use George Petrie's words) likely happened soon after 1837 when Hollybrook House was extensively rebuilt.

Armstrong describes the structure of the bottom (bass) end of the box:

"A block 2 in. long was first prepared, two curved pieces of wood ½ in. thick were attached to it at 1⅛ in. from the termination. To the outer portion of these curved pieces of wood the sides of the box were attached (Fig. I.)."

Today these parts are not well "attached", the box seems to have moved slightly, and there are now gaps around them - between the soundboard, the back, and the centre block. Clearly these curved pieces could not have formed a significant part of the main structural element of the box. Indeed it will become apparent that their main function was more cosmetic than structural. For we now come to what is probably the most significant feature of this harp that Armstrong had missed - an internal bulkhead located in the box just above the block and curved end pieces - and it is this that actually forms the true structural component for the bottom end of the soundbox. [11]

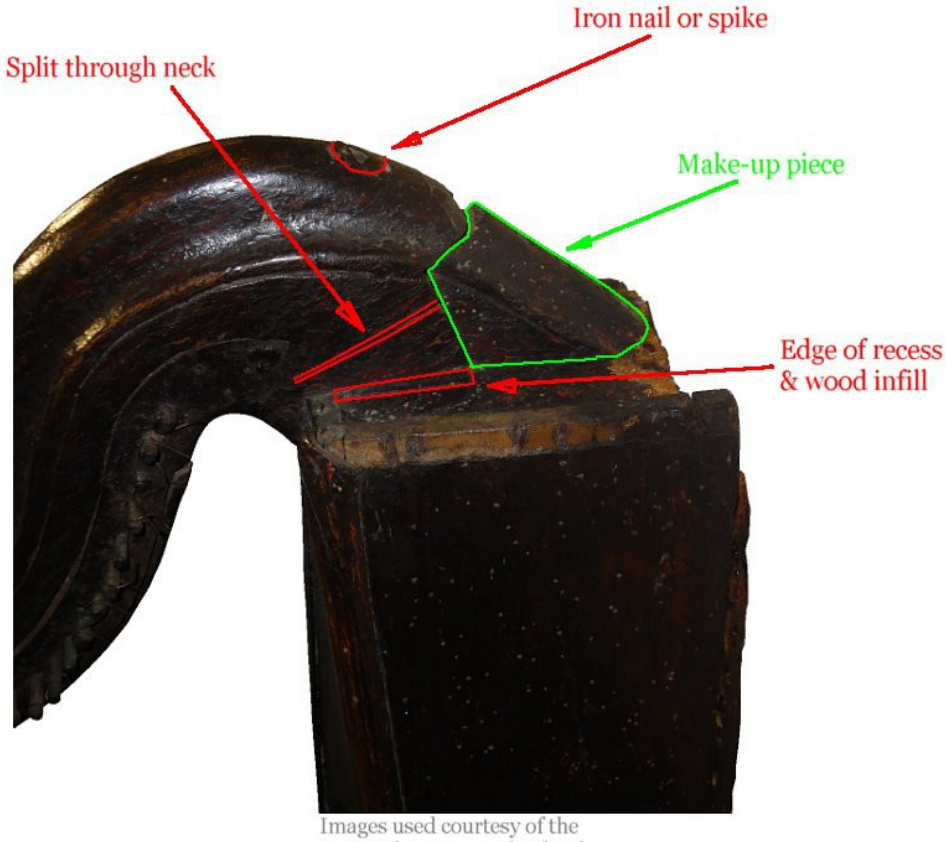
This bulkhead consists of a piece of timber, perhaps half an inch thick, which had been specifically shaped to match the internal profile of the soundbox at that position. It was attached (presumably glued) to both of the side pieces and to the centre of the soundboard where the carving had left the extra thickness to form the internal plinth. However, studying the stereo photographs I had taken of the inside of the box confirmed that it had not been attached to the main flanks of the soundboard. Instead the artificer had deliberately allowed for a small gap to exist between the top edge of the bulkhead and the inside of the soundboard. Although this gap is barely a couple of millimetres, it would have been enough to ensure the free vibration of the soundboard over its entire length - which I assume was the makers intention here. Another thing that the maker had done, which again I presume was in an attempt not to interfere with the acoustic properties of the soundbox, was to drill twelve holes right through the bulkhead. These holes are probably just under half an inch diameter (though many are now so clogged with fluff that it is difficult to gauge their true size) and are roughly arranged in four rows - two either side of the centre section. The only realistic reason that I can see for the maker going to the extra trouble of drilling all these holes is that they were made with the intention of allowing the passage of sound across what he might otherwise have perceived to be a barrier. (Whether in reality this would have made any significant difference to the sound of the harp, or not, it does perhaps give an insight into the thinking on acoustics at that time.) The existence of this bulkhead, an apparently unique feature, has important implications on the construction method used for this soundbox, but I will turn to this shortly in the section headed "Assembly".

Stereo image of internal plinth. To best view 3D effect rescale image so that crosses appear 2 to 3 inches apart.

Internal view of bass end of soundbox showing bulkhead and plinth.

Internal view of soundbox showing wooden insert along the edge where side meets back (visible just below red line).

[The photographs above taken 2012]



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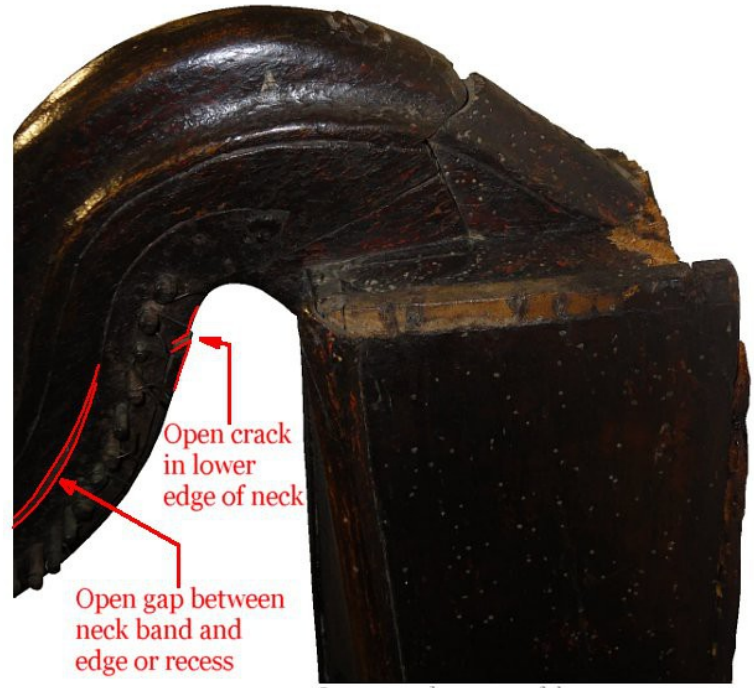

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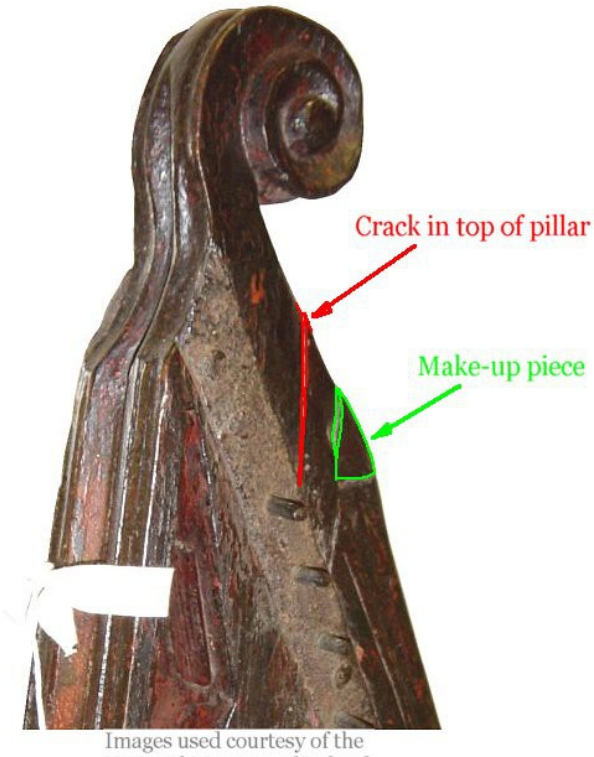
[The photographs above taken 2008]



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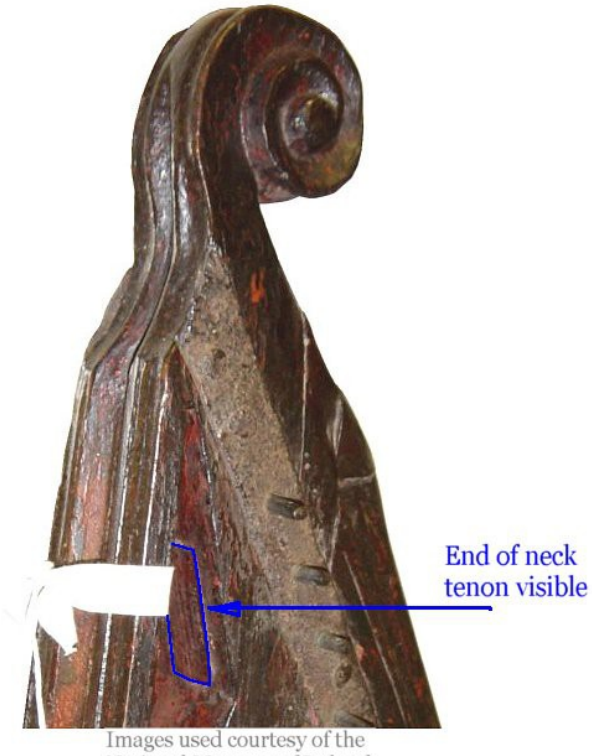

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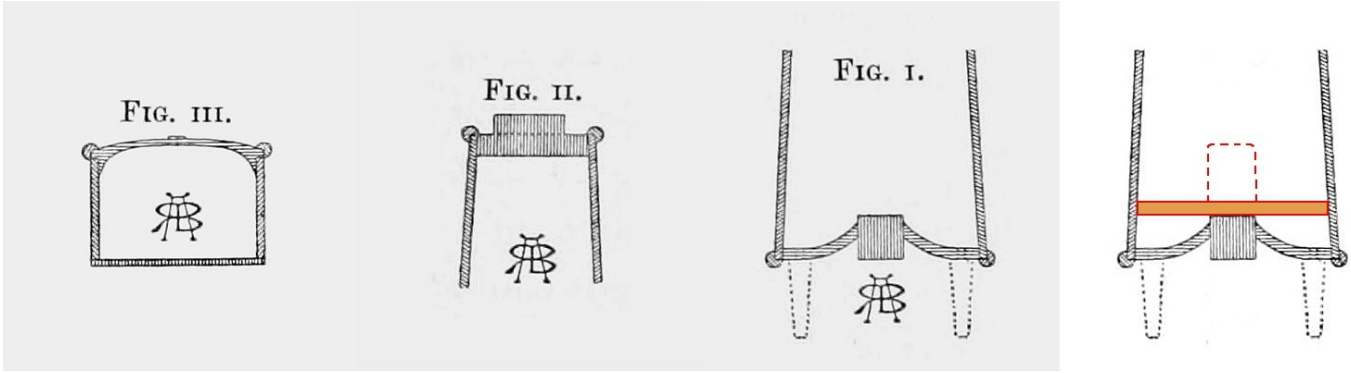


Figures from R. B. Armstrong's *The Irish and the Highland Harps,* page 97, and a modified version of Fig. I. to show the approximate position of the bulkhead and plinth that he had not been able to see. NB. Not necessarily to scale.

Of the board that covers the back of the soundbox Armstrong comments:

"The board is badly fitted and may not be that originally supplied"

The back board, which is probably made from planks of pine (or a similar timber), is about ⅜ inch in thickness and has a single large hole to allow access. On the inside, a little above this hole, a batten of wood has been attached across at a slight angle - this is probably not original and was more likely added later just to help brace the structure. The board is fixed (nailed) onto the back of the box rather than being inset within - insetting being perhaps the more common method. It is true that the board does not seem to fit the box very well and this is especially noticeable at the bass end of the harp. Yet it is certainly old enough to have suffered notable decay and worm damage and has clearly been on the harp for a very long time. However, if the small section of wood that appears to have been inset into the bottom of the left hand side of the box (as mentioned above) was added as a repair, then it is possible that the back-board would have been removed as part of this repair process and if so then perhaps it was badly refitted. But this is just conjecture.

Neck - (or "harmonic-curve")

Armstrong's information on the neck is sparse indeed:

"The upper portion of the harmonic curve is rounded, and has a moulding on either side. About the centre there is a rude representation of a crown in relief."

His comment on the 'upper portion', though not necessarily incorrect, fails to communicate its true shape. The basic cross-section could be more accurately described as consisting of a vertical rectangle whose upper portion had been shaped in the form of a 'mirrored ogee' - with the top part formed convex (like a semi-circle) and the lower concave.

The main element of the neck consists of a single piece, but by itself this does not form the entire visual profile and two extra pieces of wood had been added to make up the complete shape. The smaller of these is situated at the very top of the neck where it joins the forepillar and the other at the back end of the neck where it meets with the soundbox. It has to be emphasised that neither of these two additions has any structural purpose, they are purely cosmetic, and the harp would function perfectly well without them. It may seem odd to make the neck in this way, rather than just cutting the whole thing as a single piece, but I can think of two potential advantages for doing this. The first is that it reduces the size of wood required to form the main part of the neck, which in the case of the Hollybrook can then be cut from a piece just over 26 inches long and about 8¼ inches wide. Had the two end components not been separate then the size required would have been slightly larger, and even a small difference could prove crucial if faced with limitations of suitability and quality. The second is that it may have simplified the cutting, fitting and final

assembly of the neck's joints with the pillar and box. When the maker was happy that everything was correct these 'make-up' pieces could then be made and trimmed to more precisely fit the requisite shape. The larger piece is not actually attached to the neck itself, but rather appears to have been glued to the end of the box. It is also interesting to note that the smaller piece, which has been glued onto the top of the neck, does not seem to match with the shape of the pillar too well and it therefore seems possible that this might be a replacement for a lost original.

The neck is fixed into the forepillar using a mortice and tenon joint, a method utilised almost invariably by the Irish harps makers of the 18th century. [12] The internal detail of these joints is normally hidden from view so getting information on their size and shape is usually problematic. However, looking around the join of the pillar and neck for any signs that might have provided some clues I was delighted to find that the shape of the end of the tenon could be seen within the triangular cut-out of the harp's forepillar. Here the tenon was found to measure 4 cm. by 1.8 cm., which is not that large. It was positioned slightly closer to the left side than the right, with the distance between the side of the tenon and the face of the pillar being 1 cm., and the location of its lower edge coinciding with the point of the triangular cut-out in the pillar. I believe there is a strong possibility that this tenon was not cut perpendicular to the line of the neck/pillar join, as some might expect, but rather at an angle sloping up towards the position where the make-up piece was added. [13] Unfortunately nothing more of this joint is visible externally so it would probably need to be x-rayed to confirm the true shape.

At the other end, the neck was shaped to fit into the recess made for it at the top end of the soundbox (see above). But in cutting the profile the maker had also chosen to curve the lower edge around so that part of it also sat down against the front surface of the soundboard at the very top. Having the neck jammed against the soundboard helps to hold the board down and act to counter the tendency for the string tension to pull the board up and away from the box. By the 18th century this type of structural modification was being used on several harps [14] and it represented a significant improvement to the older form of joint that had commonly been used since mediaeval times.

Extract from Armstrong's plate. Red lines indicate the outline of the main piece of the neck. Green lines indicate the two make-up pieces at either end. The blue line shows a suggested position for the tenon.

With regard to the general standard of carving of the neck, it has to be admitted that it is not of the highest. The decorative score lines that run along the flanks are cut somewhat erratically and the lack of a smooth flow to their line is immediately noticeable to the eye. Certainly what Armstrong describes as a "representation of a crown" (if that is what it is meant to be) is very "rude" in execution and not even symmetrical. Indeed its shape even reminds me of a mooring-bollard and I wonder if it might also have been intended to serve some utilitarian function as well.

There is a significant split right through the shoulder of the neck where it joins the soundbox, and the lower part of this is what Armstrong seems to have mistakenly assumed to be an extension of the soundbox itself (see above). The crack is noticeably wider on the right side than the left, something easily explained as a consequence of the torque on the neck produced by the string tension twisting it to the left. This split has been there a long time and an attempt to repair it had been made by driving some sort of large iron nail, pin, or spike down through from the top of the neck and then hammering the top down flush with the surface. There are also two old cracks to be found on the underside of the curve - but cracking in this position is so common on the old harps that it is almost to be expected.

Forepillar

"The fore-pillar is remarkable: it springs from the portion of the sounding-board which covers the projecting block. It is almost straight, and joins the harmonic curve in the more modern fashion, the upper termination being curved backwards in the form of a scroll. Near to the junction with the harmonic curve there is a perforation in the form of a triangle. This is an unusual feature. There is no **T** formation, but the section shows the form of a stunted **Y**, which is one of considerable strength (Fig. v.)."

The pillar, which seems to be made of a much denser and closer grained timber than that used for the soundbox is, as Armstrong states, "almost straight". It is a widely held belief that forepillars of Irish harps invariably had a curved profile, indeed it has been suggested that this was one of the defining characteristics of the instrument. [15] However some makers in the 18th century clearly did not concur because the Hollybrook's "almost straight" pillar is certainly not the only example to be found from this period. [16] Forming the pillar straight, rather than curved, offers some advantages in terms of strength, but it also means that it can be made out of a much narrow piece of wood. The pillar of the Hollybrook could have been cut out from a four foot long piece of timber that was only 3¼ inches wide and 2¼ inches thick, and finding good quality straight-grained material of this size would have been easier than trying to source a much wider piece of a similar quality.

The scroll that forms the finial at the top of the forepillar is elegantly shaped though possibly not quite as accurately carved as one that might have been produced by a professional violin maker. The front face of the pillar is decorated with several long straight and well formed grooves, or channels, with the central one being the largest and forming the dominant visual feature. It has to be noted that the carving of the woodwork decoration on the pillar in general appears to be of a higher standard than that found on the neck, and though it seems most unlikely that these two parts would have been made by different people it is theoretically a possibility. However, producing well formed straight decorative channeling along the length of a straight pillar is far easier to execute and control than trying to make a groove follow a smooth curved path without giving rise to any visual deviation. (NB. The advantage is that the very straightness of the pillar can be used as a guide for the cutting tool - which was probably some type of moulding plane or 'scratch-stock'.)

The triangular cut-out at the top of the pillar is indeed an "unusual feature", in fact since there is nothing remotely similar to be found on any other extant Irish harp it could probably be more accurately described as a *unique* feature. However the very idea of putting what is in effect a large hole here does seem a bit strange, for the unnecessary removal of timber would potentially weaken the pillar. And yet since there is no sign of any cracking or damage, that which remained obviously proved strong enough. Armstrong refers to this as "the most distinctive feature of the instrument" and it does give the harp's appearance a certain visual lightness, but perhaps this was not just cut for decoration. I mentioned earlier how the end of the tenon of the neck could be seen within this cut-out, and having this cut-out would make it easier to accurately chisel out the corresponding mortice in the pillar and then be able to adjust and trim the two to get a precise fit. Certainly easier than if the mortice was having to be cut blind into solid timber. Indeed such a hole may have also

proved advantageous when it came to the final glueing together of this joint. For it would allow an even spread of glue to be more effectively obtained and also reduce the risk of any hidden trapped air-pockets.

Armstrong's last comment might give the impression that the maker had decided to replace a "**T**" section with a "**Y**", but if so this is slightly misleading. Forepillars with a T section were certainly used extensively on the earlier harps, but there are many of the later instruments (18th century) that have no notable extension to their cross-section at all. Perhaps the following description of the Hollybrook pillar's cross section places it in a better context: The outline shape of the cross-section mimics that of the neck, though the proportions of their width and depth obviously differ. So the form of the curved moulding found at the back of the pillar is of the same basic type as used along the top of the neck (a 'mirrored-ogee'). The most obvious difference to the cross-section is that the pillar has groves running up its front face. The centre one, being much larger and deeper than those that flank it gives the section the appearance of what Armstrong called "a stunted **Y**".

At the bottom of the pillar two nails had been driven through the foot in order to keep it attached to the box. These are quite old, but they are unlikely to be original and were probably added after the harp ceased to be played and became an item of display - perhaps when it was first hung up high on the pillar.

Neck bands & tuning pins

Armstrong only writes two sentences about these - the first reads:

"The bands through which the tuning-pegs pass are iron, and form single curves."

These metal bands are indeed made of iron. [17] Their form is a little rough and irregular and gives the impression of having been forged into shape by a blacksmith. These two bands are not identical: The band on the left side was found to be typically 1 inch in width whereas the one for the right was notably wider at around 1¼ inches. It was also noticed that the left band extends a slightly further at the treble end where it curves around a little more than that on the right. But perhaps the the biggest difference belies Armstrong's statement that the bands "form single curves", for although the band on the right hand side is made from a single strip the band on the left consist of two separate pieces. These two parts meet at a position between the 7th and 8th tuning pin from the bass. Here the lower of the two pieces is not curved but formed straight and it follows that the holes for the seven lowest tuning pins are likewise arranged approximately in a straight line. However, the positioning of the holes through which the tuning pins pass was generally found to be slightly irregular - possibly more so on the right side than on the left - and not quite up to the degree of accuracy that is more normally found on those harps which had brass neck bands. But iron is much harder to work and drill than brass and it is possible that the holes in the bands may also have been initially formed at the forge - by punching through the iron when red-hot - then subsequently finished to the required size with a round file. Even with best endeavours this method is unlikely to produce such a precise positioning as could be achieved with a carefully marked and positioned drilled hole into brass.

These plates were set into shallow recesses, cut to fit them in the sides of the neck and pillar, so that they sat flush with the surface of the wood. They were then fixed in place with a series of nails. The nails used at the ends of the bands are quite large and have had their heads hammered down (almost like rivets). Once these plates had been so fitted it would not have been possible to separate the neck and forepillar.

His second sentence adds a comment on the tuning pins:

"They are pierced for thirty-nine tuning-pegs, some of which are plain, while others show two forms of ornamentation, both old."

Although he made an error in his writing here - there are, and only ever could have been, thirty-seven pegs - his comments on the their form and age is quite appropriate. This fact demonstrates that the maker, rather than having to have a new set of pins especially made for the harp, was able to utilise pins salvaged from some older instruments. Evidence that this practice was not uncommon is provided by several other harps that also have been found with a mixture of old pins. [18] It would, after all, seem a perfectly sensible piece of recycling.

Assembly - of the soundbox

Armstrong seemed fascinated by the constructed nature of this soundbox and states:

"As the artificer has shown great ingenuity in the construction of the box, the following probable method by him may perhaps interest the reader."

He then continues to relate his idea of the "probable" method and sequence of construction employed by the builder. However, as mentioned earlier, Armstrong had not been aware of a very significant element of its design and I'm sure that if he had he would have come up with a different scenario, one that was the reverse of his sequence. In his opinion the frame of the soundbox was assembled first and only when this was done was the soundboard made, being then shaped and carved to fit it. But having studied the construction myself I think it far more likely that it was actually the soundboard that was made first, and that it was this that then formed the core element around which the other parts of the box were subsequently assembled. A likely sequence for the construction of the soundbox follows:

1) First the soundboard would have been cut to shape and carved out to the desired thickness and profile. In doing so the maker left an extra thick section - a 'plinth' - at the base end above which the forepillar would eventually sit, and also along the edges where the sides were to be joined. The sides of the soundboard were made to be perfectly true and straight, probably using a long plane, and then square sectioned channels were cut into these edges to receive the side boards. This was probably done using a rebate - or - grooving plane to produce an accurate and regular rebate.

2) Once he was fully satisfied with the soundboard he would then make the side pieces, cutting them to shape and squaring up the edges. Each piece could then be glued into its respective rebate in the soundboard. Doing it this way the maker could be sure of a good fit and a strong glue bond for what is an important structural area of a harp.

3) After this the top piece was cut, carefully trimmed to shape so as to exactly match the shape of the soundboard and sides, and then glued in place. (It would seem sensible for the maker to have cut out the recess for the neck prior to fitting the block, but it would be possible to cut this later).

4) The 'Bulkhead' could then be made. After its twelve holes were drilled it was carefully shaped to exactly fit and match the shape of the soundboard and sides at the requisite position, though making sure that a small gap was maintained between it and the main flanks of the soundboard. Again, when satisfied with the fit it was glued in position. (NB. The bulkhead would only have been glued to the sides and the centre part of the soundboard.) At this stage the box would have achieved its basic structural rigidity.

5) Next the lower block was shaped and added to the bass end of the box, and the two curved end pieces formed by carving out from a thicker piece of wood. These were then cut and trimmed so as to neatly fit between the sides and the block and match the inside shape of the soundboard. Then they were nailed and glued in place. The holes in the end pieces that Armstrong suggested were intended to take legs might have been made before they were fitted or added at some later stage.

6) The back of the soundbox was made from planks glued together and was cut to include the large access hole. This could have been done at almost any stage after the basic box was assembled, but it would need to have been nailed on to the box prior to the harp being strung. Likewise the

drilling of the six 'sound-holes' and the fitting of the metal centre strip could have been done after the soundbox was assembled (though before the neck and pillar were attached and the harp painted).

7) When the box was complete some of the joins were covered with moulded edging strips, this was done where the sides met the soundboard, and where these overlapped the top and bottom end pieces, but they do not seem to have been added where the sides met the back.

Paint and decoration

It is difficult today to get a genuine impression of just how this harp would have looked in all its decorative splendor. That it had been extensively painted is clear with red being the predominant colour and traces of some others still being detectable in places. Yet these tones are darkened and muted making it difficult to judge their original hue and just how vivid they would have been back then. The smaller decoration is now all but invisible which makes Armstrong's descriptions all the more important. There may be some question as to how much of the observation of the decoration was actually made by Armstrong himself and how much by Miss Hodson - in his final footnote he thanks Miss Hodson for "drawings, measurements, and descriptions of the instrument" - but the condition of the paintwork and decoration was far better in his time than it is now and so these observations provide a vital record.

A possibility exists that the harp was repainted and new decoration added during its life, so what was described may not necessarily have been original. Certainly if the piece of wood inserted at the bottom left side of the soundbox was added as a repair (see above) then that part of the harp would have needed repainting and it would have been sensible to continue with more of the instrument, if only to match the colour. It is also seems likely that the iron plates might at one time have been painted over, both to give visual continuity and to protect them from corrosion, and although areas of paint are not obviously apparent a closer inspection might reveal identifiable traces.

Known old Photographs (as a visual historic record)

To illustrate his work Armstrong arranged for a number of photographs to be taken, and one of the left side of the harp he reproduced as a plate titled THE HOLLYBROOK HARP. Another was clearly used to trace the drawn three-quarter view that he reproduced as "Fig. IV". But it is now known that Armstrong had at least two other photographs in his possession - even though he chose not to include them in his volume. The first was of the right side of the harp, and would have been the companion to the corresponding view of the left side that he had used for the plate. The second shows the harp hanging high up on a pillar in the oak paneled hall of Hollybrook House [19] and a slightly cropped down version of another print of this was later published in *The Sphere* (1919). [20] Armstrong also mentioned one other photograph of the Hollybrook harp - a half-tone print which had been reproduced in *The Leisure Hour* (1901). In this illustration there can be seen what appears to be a piece of chord attached to the back of the harp's top block and it seems likely that this was affixed to the strip of brass, referred to earlier, and was used to suspend the harp from the pillar. But apart from showing this attachment, and the fact that this half-tone printed version has had the hole in the forepillar visually infilled, the picture bears a very high degree of similarity to Armstrong's own unpublished photograph of the harp's right hand side. So close in fact that it would appear that the camera positions used to take these two pictures were no more than a couple of inches apart, and the possibility exists that all the above photographs could have been taken at the same time (c.1900).

THE HOLLYBROOK HARP.

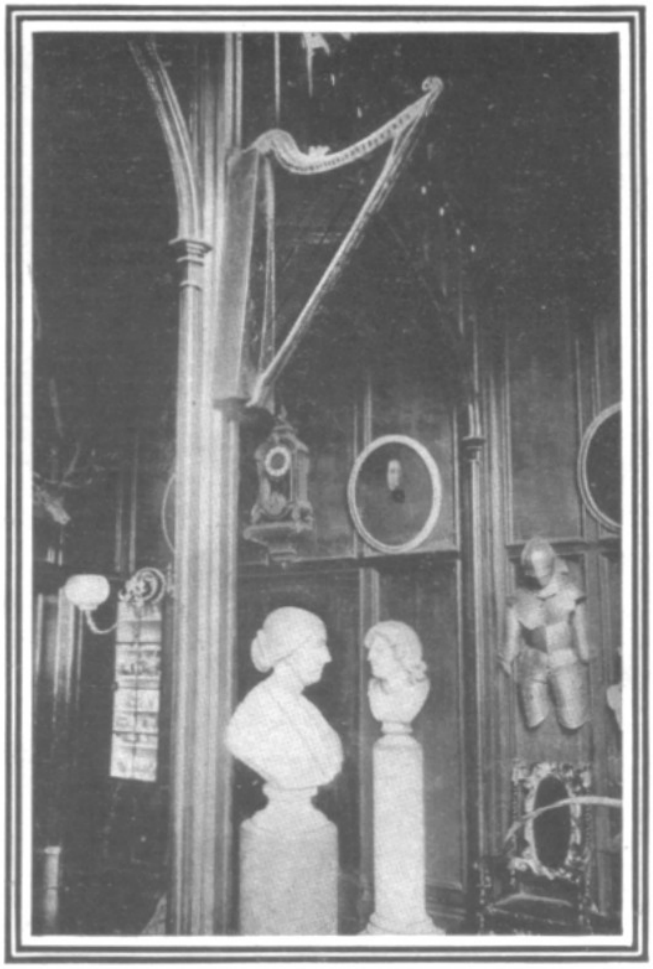
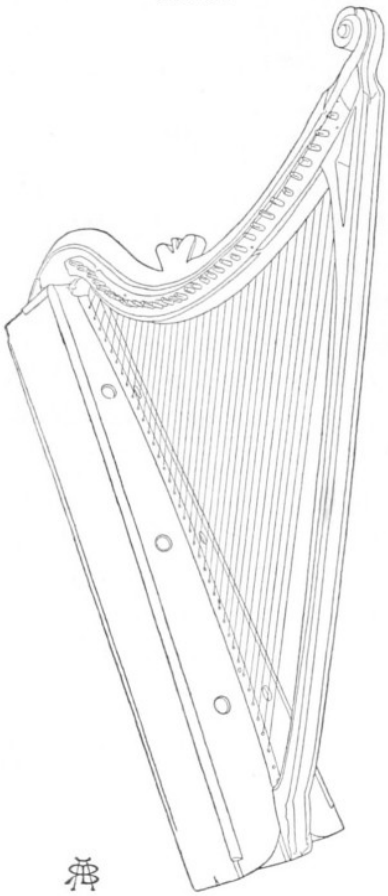
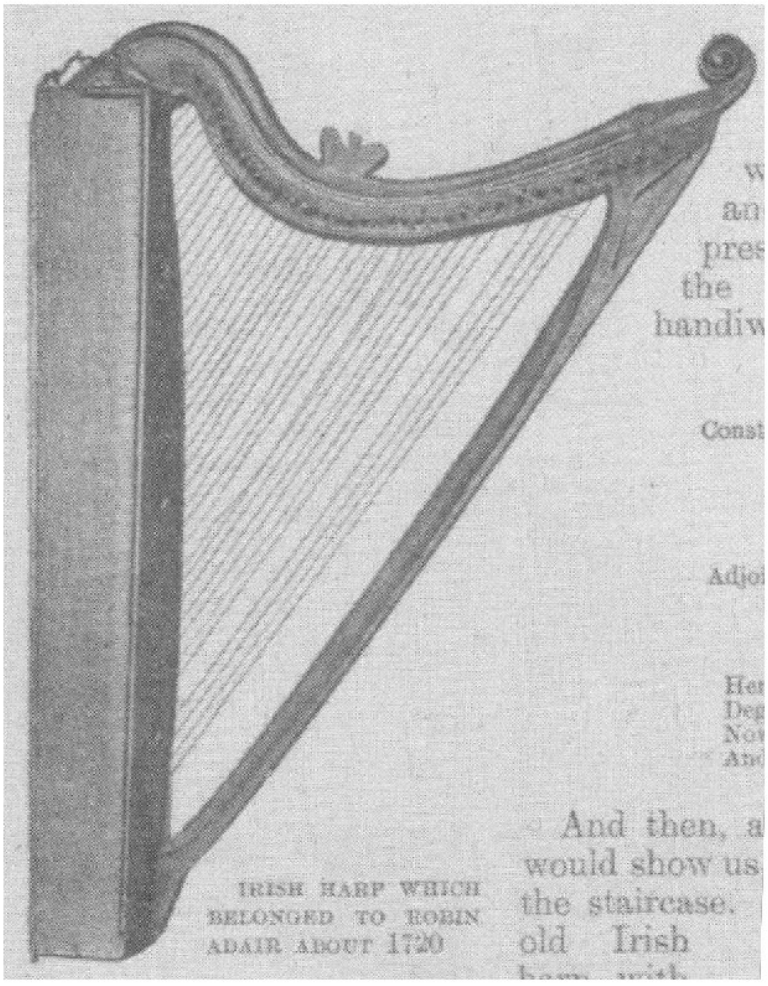


FIG. IV.





IRISH HARP WHICH BELONGED TO ROBIN ADAIR ABOUT 1720

(Clockwise) Pictures from Armstrong (plate), *The Sphere*, *The Leisure Hour*, and Armstrong Fig. IV.

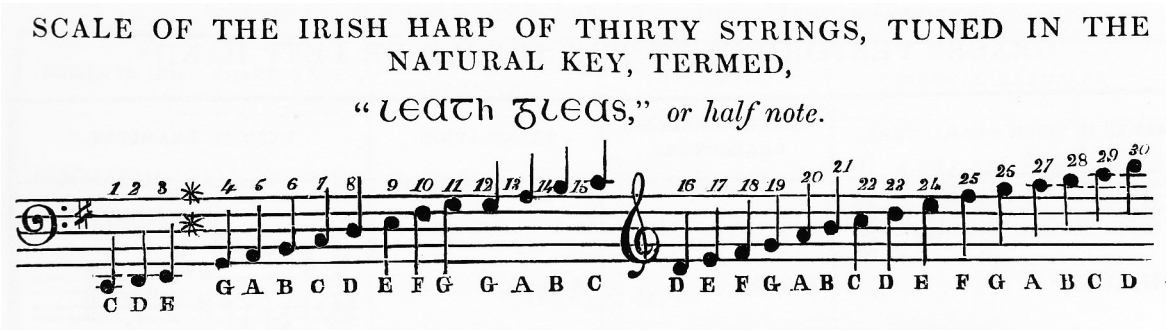
One reason why it is important to seek out old illustrations is that they can help provide a chronological record, giving a visual indication of the condition of the instrument at the time the pictures were made. Nearly 110 years had passed between Armstrong having the photographs of the harp made and my examination of it, and it was evident from studying these that during that time the structure of the harp had moved to some extent. This should not really come as any surprise, for timber is an organic substance and it is only to be expected that it will shift its shape over a considerable number of years. Although the harp today is carefully stored in climatically controlled conditions this would not always have been the case, indeed it had only been in the ownership of the National Museum for just over twenty years when I saw it - yet something like three hundred years have probably passed since the instrument was first put together.

The main area where there appears to have been some degree of further movement since Armstrong's time is in the neck. Here the two cracks along the bottom edge have got slightly bigger and are now more apparent. And the other indication of movement in the neck can be clearly seen by the fact that a noticeable gap has appeared between the iron neck band and the edge of the recess that had been cut for it. This can be especially observed in the area around the eighth tuning pin in the treble. Here the gap is now several millimetres and quite obvious, whereas in Armstrong's plate it cannot even be noticed. It is difficult to know whether it is the timber that has moved or the iron band, as either is theoretically possible. The most likely explanation would seem to be that it is the timber that had shrunk slightly and pulled up from the band. And yet, even though it would seem unlikely, there is also perhaps a slight chance that someone tried to tune some of the strings after Armstrong had seen it. If so the force acting on the old and weakened neck could have opened up the splits and placed an unexpected localised load on the iron band bending it down and distorting its shape. The problem is that both scenarios could produce the same effect. Perhaps the only way to find out would be to re-photograph the harp as it is today in an attempt to reproduce the conditions of Armstrong's photo (the camera position, the camera angle and perspective). Then by directly comparing the two - the then and now - it might be possible to make an assessment of where most of the movement had occurred and whether the neck had risen or the band had fallen.

Time would have taken its toll on other parts of the harp too and a crack in the upper part of the forepillar, near to the neck joint, is now slightly more apparent than it is in Armstrong's plate. Other signs of decline are evident in gaps that can be seen around some of the component parts of the soundbox which now seems to have distorted slightly out of shape in places - the bottom sections don't seem to line up as well as they probably should have - and there are a few more pieces of the edge trimming strips lost since Armstrong's time.

Capability - Probable tuning and assessment

Since there are no historical records relating to the tuning or range of this harp, it is necessary to make comparisons with other contemporary instruments in order to form an opinion of its practical capability. Edward Bunting recorded the tuning of the Irish harp at the Belfast meeting of 1792, and later published it in *The Ancient Music of Ireland*: [21]

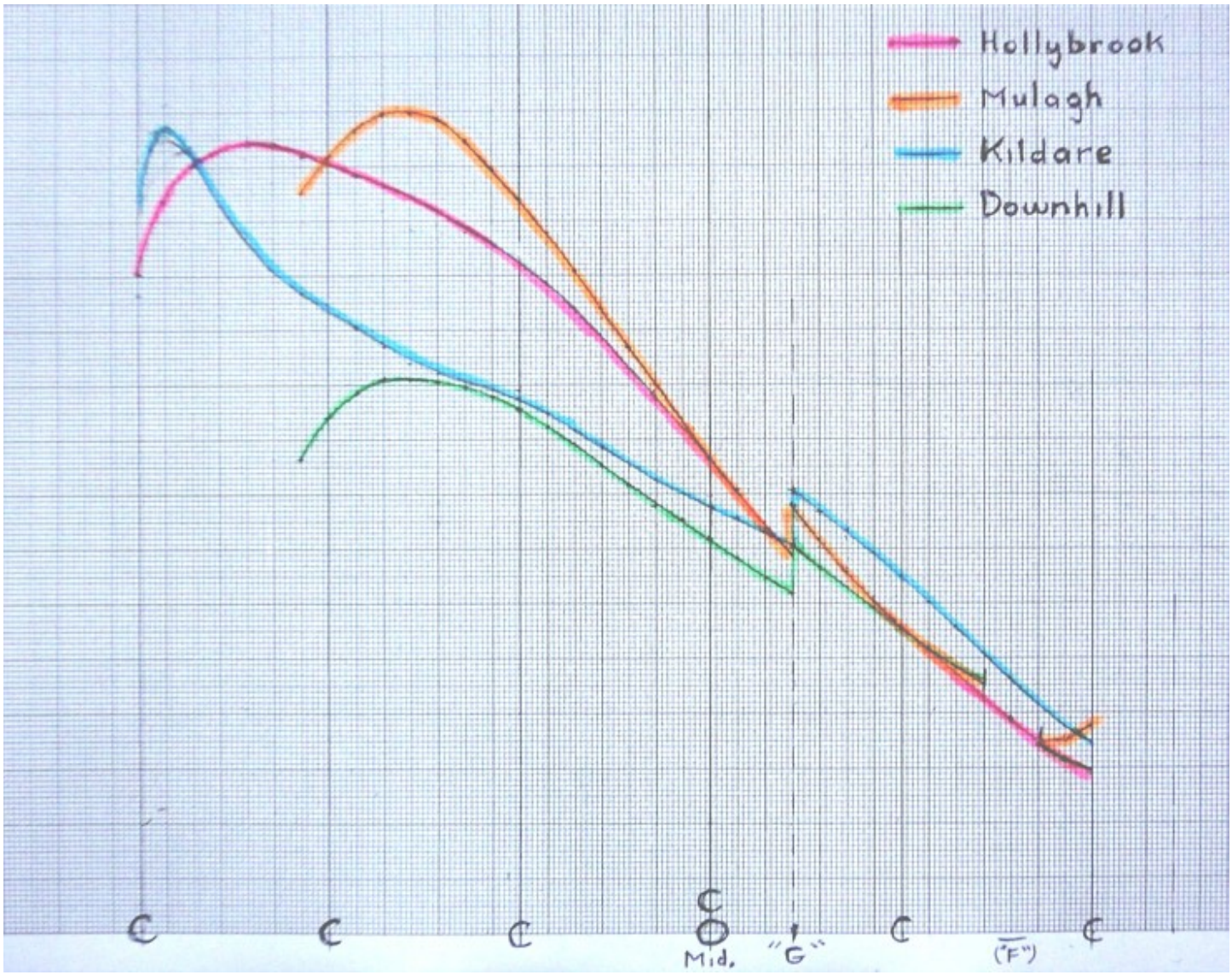


This tuning was specifically taken from Dennis Hempson's "Downhill" harp, which had thirty

strings and a range extending over four octaves. The two most notable characteristics here are the use of two strings tuned to G (the key note) and the omission of the F# in the bass. The strings that doubled the key note of G were known as the 'sisters' and effectively divided the harp into treble and bass sections. The low F# was omitted for convenience as there was no effective requirement for this note so low in the bass. However, many of the harps were larger and there is reason to believe that some of these did include the note of F in the bass (even if thought to be unnecessary when playing in the key of G, having the F string in place would be an advantage when the harpers retuned to the key of C or D - which they occasionally did).

The Hollybrook harp has thirty seven strings, which would give a range over five octaves. But there are two questions that need to be answered - what was its overall gamut and did this include, or omit, the F string in the lower bass? In an attempt to answer this, information relating to the harp's string lengths (the string scaling) were fed into a spread sheet and various tuning options analysed. The results were then compared with those obtained using data from some other contemporary instruments and from this I was able to make an assessment as to the Hollybrook's most likely tuning.

The accompanying graph is produced as a comparative aid to help visualise the relative performances of the string scaling of the Hollybrook and three other near contemporary Irish harps - the Kildare (late 17th century), the Downhill (early 18th century), and the Mulagh (mid 18th century). The graph plots relative stress against pitch (octave units) and to ensure the most direct comparison the calculations were made using identical wire properties and pitch standards for all. [22]



It was assumed that all of the harps would had been tuned with the 'sisters' but it was found that retaining the F in the bass gave better results for the Kildare and the Hollybrook. The Downhill harp can be considered as the bench-mark and was obviously used with the tuning noted above. Of the four its strings are at the lowest stress, but the instrument does work and sounds well enough with this. The Mulagh has the highest stress and the treble strings are probably at the very limit of what high quality brass wire will take - nevertheless, having reconstructed this particular instrument I can personally vouch that it can be strung with brass throughout. [23] As can be seen from the graph the Hollybrook's strings would also have been working at a reasonably high stress, and this would have provided both brightness and power. But this would also have meant that the strings could not have been too thick, for a heavy string under high stress produces a large tension. And it is clear from the construction of the harp - the relatively thin board and the somewhat unusual nature of the neck-to-pillar and neck-to-box joints - that it was never intended to be under any substantial force. [24]

To sum up. This harp, at just over four foot, may not have been as big as some, yet its bass would likely have been distinct and its treble bright and clear. All in all, a nice instrument and probably well suited to Robin's requirements when entertaining his guests imbibing in his famed convivial hospitality.

History - A Brief Time-Line

The harp is thought to date from c.1720, with the first written note of this appearing in George Petrie's letter to O'Curry. The source of this date seems to lie in knowledge handed down though the Adair/Hodson family tradition and, having studied this harp, I see absolutely no reason to doubt the authenticity of these claim. A date of c.1720 would seem perfectly appropriate to me.

A more detailed account relating to the history of the harp and its owners will be given in another article, but the following time-line summarises some key events:

Harp thought to have been made c.1720.

Robert (Robin) Adair died 1737.

Robin's son John (Jonny) named in *Kilruddery Hunt* (c.1744).

Robin's daughter Eleanor married William Hodson. Their son (Robert Hodson b.1747) married his cousin Anne (only daughter of Forster Adair of Hollybrooke) and so Hollybrooke came under the family name of Hodson.

1796 M. de Latocnaye visited Hollybrook.

House rebuilt in 1835-7 (but contents - including harp and portraits - retained).

Petrie writes about Robin Adair and the harp (c. 1861) having apparently visited Hollybrook on some earlier occasion.

Notes and Queries (1864 +) a discussion relating to Robin Adair and the song.

1878 Harp loaned for exhibition in Dublin.

The Leisure Hour - published in 1901 reproduced a photograph of the harp and some details on Adair.

Armstrong published his account in 1904.

The Sphere - published in 1919, included a cropped version of an older photograph.

Later in 20th century the Hodsons moved to Britain and took the harp with them (Hollybrook House damaged by a fire in 1969 and subsequently converted into apartments).

In May 1986 the harp was sold by Sotheby's of London and purchased by the National Museum of Ireland for - according to the acquisition register - £4,571 (sterling). [25]

I would like to express my gratitude to the National Museum of Ireland for allowing me access to this instrument, and in particular I would like to thank Michael Kenny (now retired), Jennifer Goff and Sarah Nolan for providing their assistance and time.

Endnotes

NB. Further details of the harps whose names have been written in red below may be found by following the relevant links at:
https://www.wirestrungharp.com/harps/historic_harps/

[1] Eugene O'Curry, *On the Manners and Customs of the Ancient Irish*, Vol. III, 1873, p. 296.

[2] C.H.I., 'Who was "Robin Adair"?', *The Leisure Hour*, January 1901, p. 206.

[3] This work was mainly facilitated with the good offices of Michael Kenny - (now retired), the Curator of the museum's Art and Industry division at that time. But I was also assisted by Dr. Jennifer Goff and Sarah Nolan, and for the help of them all I would like to express my gratitude.

[4] Robert Bruce Armstrong, *Musical Instruments Part 1, The Irish and the Highland Harps*, Edinburgh, 1904, pp. 96-100.

[5] This suggestion that Armstrong did not have the opportunity to make a thorough study at the time is supported by his final footnote on page 100 where he writes: *The writer is indebted to Lady Hodson for allowing him to examine this Harp, and to Miss Hodson for drawings, measurements, and descriptions of the instrument*. Here it is apparent that he had required Miss Hodson to supply him with information that he otherwise would have obtained himself.

[6] At the end of a note written to Armstrong, W. H. Gratton Flood briefly states "The OConor Don P C has OCarolan's Harp." This letter dated 11th May 1905 to be found bound in between pages 100 and 101 of R. B. Armstrong's own copy of *The Irish and the Highland Harps,* now kept in the library of the Royal Irish Academy. See https://www.wirestrungharp.com/library/armstrong/ for a catalogue of the contents of this volume, where this letter is listed as item 46 of the additional inserts.

[7] I intend to expand upon this in a future article.

[8] It is apparent that Armstrong had been unable to see much of the detail inside the box and in consequence had missed this feature.

[9] An interesting observation on this was made by Dr. James MacDonnell in a letter written to Edward Bunting as the latter was preparing to publish his 1840 work. In it he states: *The obliquity of the short strings is greatest, and the management of this is a principal difficulty in the mechanical construction of the instrument*.

Charlotte Milligan Fox, *Annals of the Irish Harpers*, 1911, p. 281. (for a transcript).
Queen's University Belfast, Library, Bunting Manuscripts, MS4-35/16. (for the original letter).

[10] In his memoirs the 18th century harper Arthur O'Neill gives an account of what might be this very process in action. Here he relates of a harp that was being completed by the maker Connor O'Kelly: *...by means of Treats and Jokes he contrived to finish it, But had to be taken asunder as when it was tuned, the treble was thought too long, it had 40 Strings 35 in General being considered enough. The Harp was a second time put together, and turned out the best one I ever heard or played upon.*
https://www.wirestrungharp.com/library/oneill-memoir_ms4-14/ p. 48. (for a transcript).
Queen's University Belfast, Library, Bunting Manuscripts, MS4-14. (for the original MS.).

[11] Armstrong's failure to observe this most important feature further demonstrates that he had probably been unable to look very far inside the box.

[12] The only known exception being the Magenis harp made by Cormick O'Kelly in 1711 (and even this was probably a one-off). With this specific harp the maker chose to insert the pillar into the neck instead.

[13] There is good reason to believe that angled tenons were used on the joints of several of the old harps, they are more difficult to cut but can prove to be far more effective from a structural point of view. I used one on my reconstruction of the Mulagh harp.

[14] Some other 18th century examples would include the Downhill, the Royal Irish academy No. 2, the O'Conor/Carolan at Clonalis House, and the Belfast Museum or O'Neill harps.

[15] Joan Rimmer, 'The Morphology of the Irish Harp', *The Galpin Society Journal*, XVII, p. 39.

[16] Other examples would include: the O'Connor/Carolan harp at Clonalis House, the William Kearney No. 1, the Reverend Best's, and the harp being played by Arthur O'Neill in the portrait by Con O'Donel.

[17] Although the metal bands found on the earlier harps are invariably of a copper-alloy, the use of iron on 18th century instruments is certainly not unknown. Two other examples - the Royal Irish Academy No.2 and William Kearney No.1 - provide evidence of this.

[18] For example - the Royal Irish Academy No. 2, Downhill and Kildare harps.

[19] These two photographs were found inserted opposite page 96 of R. B. Armstrong's own copy of *The Irish and the Highland Harps,* now kept in the library of the Royal Irish Academy. See - https://www.wirestrungharp.com/library/armstrong/ for a catalogue of the contents of this volume, where these photographs are listed as item 45 of the additional inserts.

[20] *The Sphere*, 26th April 1919, p. 21.

[21] Edward Bunting, *The Ancient Music of Ireland*, 1840, p. 23. For Bunting's original notation see - Queen's University Belfast, Library, Bunting Manuscript (MS4-29, page bearing the number 153, annotated "Hempsons Harp 1702").

[22] The information for the various harmonic curves was obtained from an examination of the harps undertaken between 2007 - 2008.

[23] During the 18th century high quality brass wire for use on harpsichords and other similar keyboard instruments would have certainly been available in Ireland, and it is to be assumed that someone like Robert Adair would have had little problem in obtaining it.

[24] There seems to be a popular misconception that the wire-strung harps were under some kind

of "massive tension" which produced a "huge sustain requiring constant damping". But the practical reality is that many of them would not have been able to withstand the sort of forces that some might imagine.

[25] The following brief anecdote was related to me by Michael Kenny (now retired): Michael went over to London to collect the harp, but due to a lack of suitable protective packaging he thought it safest to bring the harp back within the aircraft with its own personal seat booked. And so the instrument accompanied him on a flight back to Dublin as a "passenger" - the name on the flight ticket given as "Mr. Harp".

Note: Except where otherwise stated, all photographs and illustrations by Michael Billinge.
The colour photographs are used courtesy of the National Museum of Ireland.

Appendix

The full text of Robert Bruce Armstrong's comments from, *The Irish and the Highland Harps*, pages 96 to 100, follows:

[page] 96

THE HOLLYBROOK HARP

This Harp is unlike any of those already described, and is the only known specimen of considerable antiquity the box of which is not cut out of a solid block. It is probable that logs of bog sallow were not obtainable within easy reach,[1] and the difficulty of transporting a suitable block from a distance was so great, that the artificer was forced, in place of constructing the box of the instrument in the accustomed manner, to build or construct it out of several pieces. It appears that he was aware of the usual form and followed it. The lower portion of the box, for instance, shows what was intended to represent a stunted projecting block, on either side of which the sounding-board terminates in curves. Again the grain of the wood of the sounding-board runs along the strings, and the sides of the box are deeper

1 There are no bogs along the low-lying portions of Wicklow or the neighbouring county of Dublin. Bogs do occur in Wicklow, but upon the high ground where willow would not grow.

[page] 97

at the upper extremity than at the lower termination. As the artificer has shown great ingenuity in the construction of the box, the following probable method by him may perhaps interest the reader. A block 2 in. long was first prepared, two curved pieces of wood ½ in. thick were attached to it at 1⅛ in. from the termination. To the outer portion of these curved pieces of wood the sides of the box were attached (Fig. I.). A block of wood 1 in. thick to which the sides were attached formed the upper termination of the box. A portion of this block, wedge-shaped in form, protruded from the termination of the box; to this the harmonic curve was fitted (Fig. II.). The framework of the box being thus constructed, it was probably placed upon a plank of suitable wood, perhaps rather more than an inch thick; lines were then drawn indicating the outer and inner sides and ends of the frame and the projecting block. The outside portions of this board were then cut away so as to allow the inner portion to be inserted. The sound-holes were then made and the metal string-band attached, and the exterior of the sounding-board formed convex across the strings. And finally, the inner portion of the sounding-board was hollowed into the form of a flattened arch. The sounding-board being securely fastened to the sides, ends, and projecting block mouldings, the section representing a segment of a circle was attached so as to

cover all the joinings (see section, Fig. III.), and the back covered in by a board. It is clear that this Harp was not intended to rest upon the lower termination of the box, for there are two holes in the outer portions of the curved pieces of wood into which pegs or supports were screwed; the worms of the screws are distinctly visible (Fig. I.). The sounding-board, the grain of which runs along the strings, has been slightly raised by the tension of the strings. In thickness it is ¼ in., and in it are six circular sound-holes, 1 in. in diameter. There is no raised string-band, but in place of the "shoes of the strings" there is a metal band ¾ in. wide, extending from the fore-arm to the harmonic curve. This band is pierced for thirty-eight strings, the holes being ⅛ in. at the surface and 1/16 in. next the wood. This metal string-band is certainly old, it is fastened by nails and is fairly strong, but not

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thick, and would not interfere much with the vibration; it, however, did not answer the purpose intended, as the sounding-board is badly split for some length along the string-holes. The raised string-bands to be found upon the older Harps appear better to have withstood the tension of the strings than this metal band fastened as it is by ordinary nails. The sounding-board is 4½ in. broad at the upper extremity, and 9½ in. broad at the lower termination. The length of the box is 37 in.; the sides are 5⅜ in. deep at the upper extremity, and 4½ in. deep at the lower termination. In the board now covering the back of the box there is a large cavity. The board is badly fitted and may not be that originally supplied. As there are six sound-holes through which the instrument could be re-strung, a cavity at the back was unnecessary. All the portions of the box are most carefully put together, and, if when constructed and decorated there was no cavity at the back, it must have been difficult to trace the several joinings.

That portion of the block at the upper termination of the box, to which the harmonic curve is attached, does not rise from the centre of the box (Fig. II.), the measurement on the left side being 1⅝ in., while that on the right side of it is 1⅛ in. This arrangement allows the strings to be more perpendicular than they otherwise would be. The bands through which the tuning-pegs pass are iron, and form single curves. They are pierced for thirty-nine tuning-pegs, some of which are plain, while others show two forms of ornamentation, both old. The length of the shortest string is 2⅜ in., that of the longest string is 37 in. The stings at present on the Harp are all brass, of the same gauge, and are modern. The upper portion of the harmonic curve is rounded, and

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has a moulding on either side. About the centre there is a rude representation of a crown in relief. The fore-pillar is remarkable: it springs from the portion of the sounding-board which covers the projecting block. It is almost straight, and joins the harmonic curve in the more modern fashion, the upper termination being curved backwards in the form of a scroll. Near to the junction with the harmonic curve there is a perforation in the form of a triangle. This is an unusual feature. There is no **T** formation, but the section shows the form of a stunted **Y**, which is one of considerable strength (Fig. v.).[1] The extreme height of the instrument unsupported by pegs is 4 ft. 1¼ in.; the greatest width is 2 ft. 2½ in.

This Harp is painted and decorated. The colour foundation, sober red, is varied by splashes of rich brown, or dark brownish green. Upon this foundation the designs are traced. These designs are in gold, outlined in black, black lines being added when necessary to increase the effect. The Harp had originally not been varnished, so the greater portion of the gold had disappeared before varnish was applied; but upon that portion least likely to have been subjected to friction, that in the under side of the harmonic curve, the ornamentation is distinct. The ornamentation may be described as an attempt to represent a Chinese design. Upon the left and right sides of the box there are foliaceous patterns. Upon the front of the fore-pillar there appears to have been a foliaceous pattern, and a foliaceous pattern fairly distinct is also to be seen upon the lower side of the harmonic curve. The sounding-board received more attention from the decorative artist than the other portions of the instrument. At the lower termination and upon the left side there is an arrangement of leaves and fruit, while upon the right side an arrangement of leaves and flowers is fairly distinct. Between the second and third sound-holes, and upon the left side, a bird with long, straight neck and head, apparently an ostrich, is distinctly visible; while upon the right side a bird with a long, waving neck can be traced. Between the first and second sound-holes, and on the left side, a figure of a man with a hat, very Chinese in form, is distinctly

seen; while upon the right

1 When preparing the drawing of this Harp, the writer found it impossible to do more than indicate the outline of the fore-pillar. The section, Fig. V., is reduced from a full-sized drawing. In front the measurement is 2⅛ in., from front to back 1⅜ in., the circumference being 6 inches.

[page] 100

side there is the figure of a man, very indistinct, and, above, an eagle. Between the upper termination of the box and the first sound-holes on both sides, there are foliaceous designs. The Harp shows signs of having been considerably used.

It is not known how long this Harp has been at Hollybrook. It is supposed to date from 1720, and is old enough, and is believed to have been the Harp of a former proprietor, Robert Adair, "so famous in a number of songs in Scotland and Ireland," as M. de Latocnaye, who visited Hollybrook in 1796, informs us.[1] The author of the words of the song, Robin Adair, so happily wedded to the ever fresh and beautiful melody, Eileen Aroon,[2] is not known. They were sung by Braham at his benefit in 1811, and may have been old at that period. Much has been written about them, but no definite statement can be made.

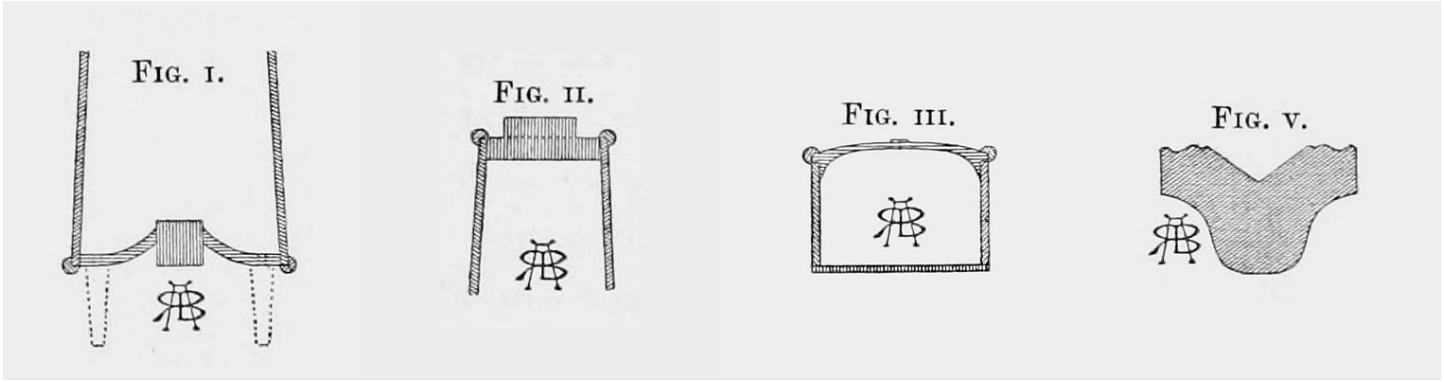
Robert Adair of Hollybrook was the ancestor of the present possessor of the Harp, Sir Robert Adair Hodson, Bart., of Hollybrook, County Wicklow, where it is still preserved, who has kindly allowed it to be photographed for the purpose of illustrating this work.[3]

Of this Harp a half-tone block illustration from a photograph appeared in The Leisure Hour for January 1901. It is to be regretted that this illustration fails to show the triangular perforation of the fore-pillar, the most distinctive feature of the instrument.

1 There is no similar statement regarding any other Robert Adair, and as De Latocnaye visited Hollybrook, he presumably got his information upon the spot. - Leisure Hour, January 1901.

2 Petrie, in O'Curry's Lectures, vil. iii. p. 298; Hardiman's Irish Minstrelsy.

3 The writer is indebted to Lady Hodson for allowing him to examine this Harp, and to Miss Hodson for drawings, measurements, and descriptions of the instrument.



The Figures from Armstrong's text. Fig. I, II, III, from page 97, and Fig. V. from page 99.