REF: TC/74/6

16th September 1974

N E W S L E T T E R No. 10

1. GENERAL

1.1 Contents of this issue

One of my correspondents has suggested that it would be helpful to have a contents list for each issue, to assist readers in locating items which interest them. Here is a start:-

Section 2 describes a test made at Canterbury which suggests that "leaky" plated heads may not be as damaging as had been supposed.

Section 3 includes some photographs of the special type of ventilators used for isothermal glazing in Italy, and of the installation at St. Maria am Gestade in Vienna. There is also more information about the simplified method of fixing windows, in use at Berne Minster.

Section 4 continues the saga of war-time storage of medieval glass. Will everyone please see what information is available about war-time storage in their area - before it is too late, and memories have gone!

Section 5 is a cumulative index to News Letter Nos. 1-10.

1.2 The Isoprobe at the University of York

This instrument is now working well, after a lot of faults have been eliminated, and analyses can now be carried out in 100 seconds. It has been easy to introduce a helium path and the analyses always include alumina and silica, but soda sometimes gives trouble.

1.3 Finance for the News Letter

After my retirement there were some problems in ensuring the future of the News Letters, but the Radcliffe Trust Scheme for the Crafts came forward with a grant of £100 and the University of York agreed to provide facilities for document reproduction. Thus the immediate future was guaranteed. Since then, The Union Académique Internationale has voted BF 50 000 so that the continuation of the News Sheets is assured for many issues to come (at least another ten, depending on the new costing situation).

2. CANTERBURY PLATED HEAD

A significant piece of evidence has come to light which suggests that the glass at Canterbury may not be continuing to deteriorate at the rate which had been suggested during the CVMA Colloquium held at Canterbury in September 1972.

It is well known that modern glass will deteriorate in a few years when kept under perpetually moist conditions. For example, a piece of glass was displayed at the 1972 meeting which had been taken from a "leaky" double-glazed window of a heating swimming bath. The outer surface of the glass was bright and shiny but the inner surface had become permanently etched after about 4 years' exposure to continuous condensation in the interspace.

By analogy with this experience it was easy to assume that those "plated" heads at Canterbury Cathedral which had been edge-joined with water-soluble Lepage's glue, and which had formed discoloured deposits under the plating after the glue had dissolved away, would show some kind of deterioration of the inner surface of the modern glass used for the plating, but this is not the case with one head which was in bad condition.

On 8th August 1974 Mr. Frederick Cole placed a panel on view in the Canterbury workshop for discussion by some experts who were present. This had been repaired by Samuel Caldwell junior in the period 1947 to 1950 and had been mounted in a window (SXIV) of the south choir clerestory of the Cathedral for about 30 years. The cracks in the head had been edge-joined with Lepage's glue and the head had then been "plated". After 30 years the water-soluble glue had entirely disappeared and, opposite the re-opened cracks in the medieval glass, it could be seen that there were white or grey deposits on the inside of the plating which closely followed the lines of the cracks in the medieval head (see Fig. 1). From the outside some of these deposits had a fuzzy appearance and it was not possible to decide their nature although three hypotheses seemed tenable:- (1) the fuzzy lines might be fungal growths or (2) they might be lines where the modern glass had weathered as a result of moist air passing through the cracks in the medieval head or (3) they might merely be lines of "dust" borne in the air which passed through the cracks as the air in the plated cavity alternately expanded and contracted in a daily rhythm.

Mr. Cole agreed that Mr. Peter Gibson should remove the plating and it was then found that the inner surface had white or black streaks on it; Fig. 2 shows a much-enlarged view of one of these streaks on the plating. The black streaks were composed of narrow heaps like miniature mountain ridges (see Fig. 3) which could be as much as 0.9 mm high and apparently represented the accumulation of dirt passing through the crack. Samples of both the white and black deposits were trapped in folded Sellotape (see Item 4 of News Letter No. 9) and sent to Dr. N. J. Bridge, of the University of Kent, for analysis by X-ray diffraction. After the samples had been taken it was found that the black deposits smeared easily and had a greasy feel, rather like soot.

The plating glass was then carefully washed in cold water and the inner surface was examined for any signs of etching by the linear deposits. However, none was found and the surface was uniformly bright and shiny, showing no evidence of any deterioration. I must admit that I had confidently expected to find some kind of permanent evidence of these deposits but I was quite wrong and the glass was perfectly shiny and reflective.

No useful comment could be made on the state of the medieval glass but this experience is clear evidence that the environment inside the plating has not caused any damage to the modern glass, in marked contrast to the environment inside the leaky double-glazing of the window in the heated swimming bath. I cannot try to argue that the medieval glass suffered from the presence of the plating and I believe that it was protected!

Dr. Bridge's report on the nature of the deposits on the surface (especially the white deposit) will be awaited with the greatest interest but I should very much like to hear from anyone who has either (a) unplated a head recently or (b) has a head which has been plated for 50-100 years and is prepared to un-plate it for a careful scientific study of the condition of the modern glass. News Letter No. 11 will contain an account of the glass of the Great East Window at York Minster after the removal of some of the external protective glazing.

3. ISOTHERMAL GLAZING: MORE DETAILS

3.1 Santa Croce Florence

News Letter No. 9 contained a description of the isothermal glazing installation at the church of Santa Croce in Florence, and some photographs are now available for use in connection with the description in section 2.1.2 of News Letter No. 9. Fig. 4 shows the view, from outside, of the tracery. The three panels are covered by a single sheet of modern glass and there is ventilation to the interior of the building by means of the three sets of louvred slots placed in the "eyelets" of the tracery between the panels.

At the bottoms of each lancet are two ventilation openings cut in the stonework of the sill on the inside, so that air from the building can enter the space between the medieval window and the external protective glazing. The ventilations are covered with metal sheet, bent into a right-angle, to exclude the light, as shown in Fig. 5. It is not known what resistance to the flow of air is offered by the louvres in the tracery or the slots in the sill.

3.2 St. Maria am Gestade, Vienna

Fig. 6 shows the 3-lancet south chancel window of the church of St. Maria am Gestade in Vienna. The gap between the re-hung medieval glass and the external glazing can be seen at the bottoms of the two side lancets. The four screwed bolts can be seen where they throw shadows on the sill. In the central lancet the gap at the bottom has been covered by a sheet of copper which prevents the light from shining through.

The east window, from which the glass had been removed at the time that the photograph was taken, can be seen at the top left corner of Fig. 6. The gap is 65 mm and probably has a resistance to flow of air of the same magnitude as the column of air between the two glazings.

3.3 The new Swiss system

News Letter No. 9, item 2.2, last paragraph, mentioned the extremely simple arrangement for supporting medieval windows internally in a north window at Berne Minster which has recently been introduced by Konrad Vetter. It was stated that the arrangement would be described in Ian Addy's report of his visit; that report has become available at the time of going to print and a brief description has been included here. It is hoped to reproduce part of his drawing, and perhaps some photographs also, in News Letter No. 11.

This system is perhaps suitable only for mounting medieval panels separately in a window with a background which is largely white because there is no provision for preventing light from shining around the edges although the surround to the panel is made of dark glass. Ian Addy's report (his Fig. 1.S/2) shows that the edge of the window is supported in H-section metal which is itself held in an Anti-Korrodal frame 25 x 25 mm. The outside dimensions of the framed panel are 630 x 935 mm and it is supported at the bottom corners by "cups" made from 2 mm gauge steel which are pegged into the mullions. It is retained at each side, near the top of the frame, by U-section holders, also pegged into the mullions and rotatable. To remove the panel it is lifted clear of the bottom cups and swivelled at the axis of the top supports so that it can be withdrawn downwards in front of the bottom cups. The space between the two glazings is only 22 mm. Diagrams will be included in News Letter No. 11.

4. STORAGE OF GLASS FROM FAIRFORD CHURCH

FROM 1940 to 1945

I am indebted to Mr. Hilary Wayment for the following note. "The windows of Fairford Church, comprising some 130 sq. m. of medieval glass, were stored from July 1940 to August 1945 in the stone vaults under Fairford Park, an eighteenth century country house which was demolished after the war. The vaults consisted of a series of passages at foundation level, not high enough for a man to stand, and used for piping, electric wiring etc. The glass was packed in specially constructed cases, and wood shavings were used to keep the panels firm. The cases were lowered into the vaults on rollers running on a long wooden ramp, and the opening was then walled up because the house had been taken over by the military, and it was feared that without this protection the cases would not be safe. But the glass was, as a result, left with little or no ventilation in a relatively damp atmosphere, and the wood shavings cannot have improved matters.

J.G. Joyce, author of The Fairford Windows (London, 1872), commented on the poor condition of many of the windows; but those who saw the Fairford glass before the war of 1939-45 appear to be agreed that there has been a noticeable acceleration in its decay since that time. It must be remembered that the illustrations to Joyce's book were reproduced from his watercolour drawings, and necessarily gives a somewhat idealised view of how they looked in his day; moreover, many of the postcards available before and immediately after the war

were reproduced not from photographs but from mono-chrome drawings. Nevertheless it seems likely that there has been an accelerated decay, and the conditions of storage during the war may well have contributed to this".

Thirty years have passed since glass was put into war-time storage and there is a risk that information may become lost. Will anyone who knows what was done with any glass during the war, please get in touch with me so that a record can be made as to whether the storage was wet (as at Canterbury, Fairford and Chelsea Old Church) or whether it was dry (as at Great Malvern Priory)?

5. CUMULATIVE INDEX TO NEWS LETTERS NOS. 1-10

This brief index covers all the main items under each heading. The references are generally to the News Letter and the section, e.g. 2(1.1.1) means News Letter No. 2, section 1.1.1, but three-figure numbers are to bibliography references, e.g. 8(150) means bibliography reference No. 150 in News Letter No. 8. (Note, these references are to bibliography items subsequent to those published in the British Academy Volume, occasional papers Part I, price £4. French and German Translations of the introduction to this bibliography are available from me without charge.

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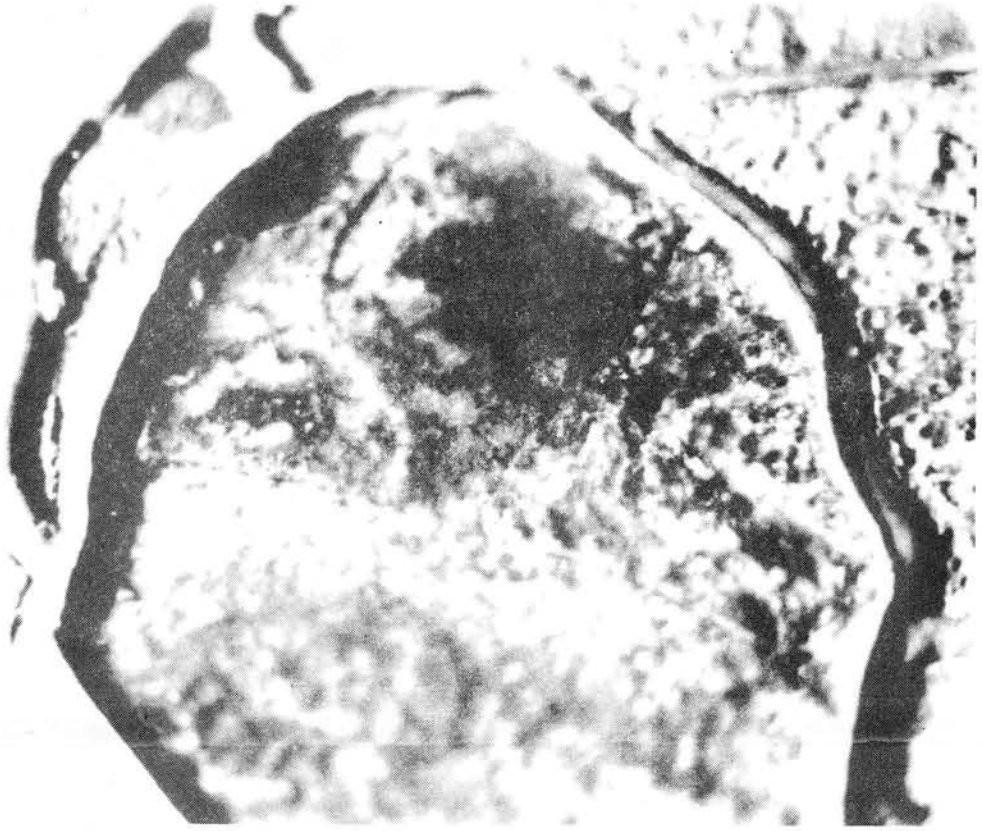

Fig. 1

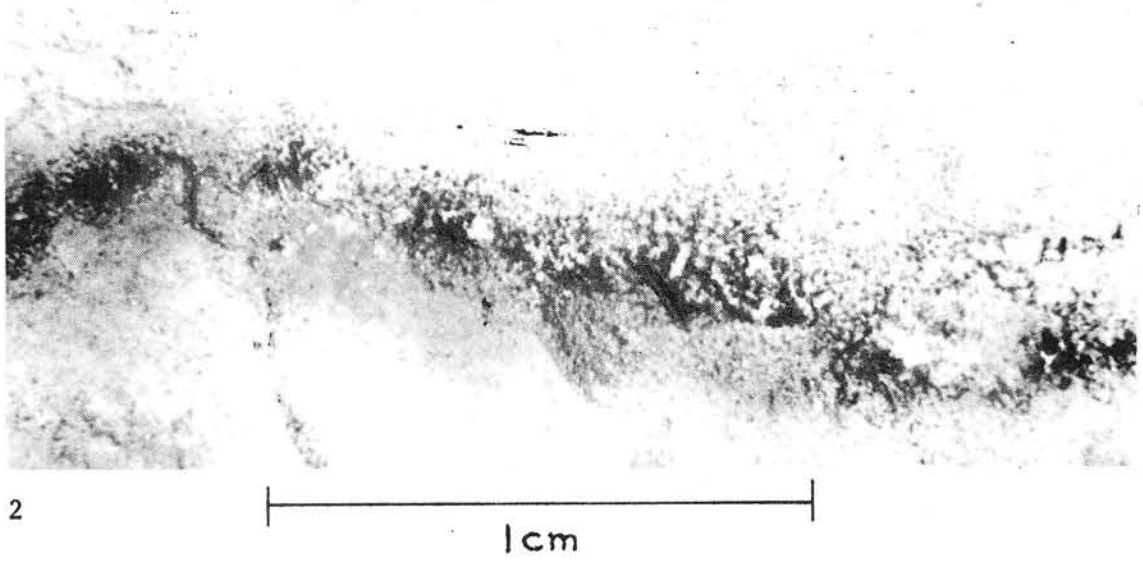

Fig. 2

Fig. 3

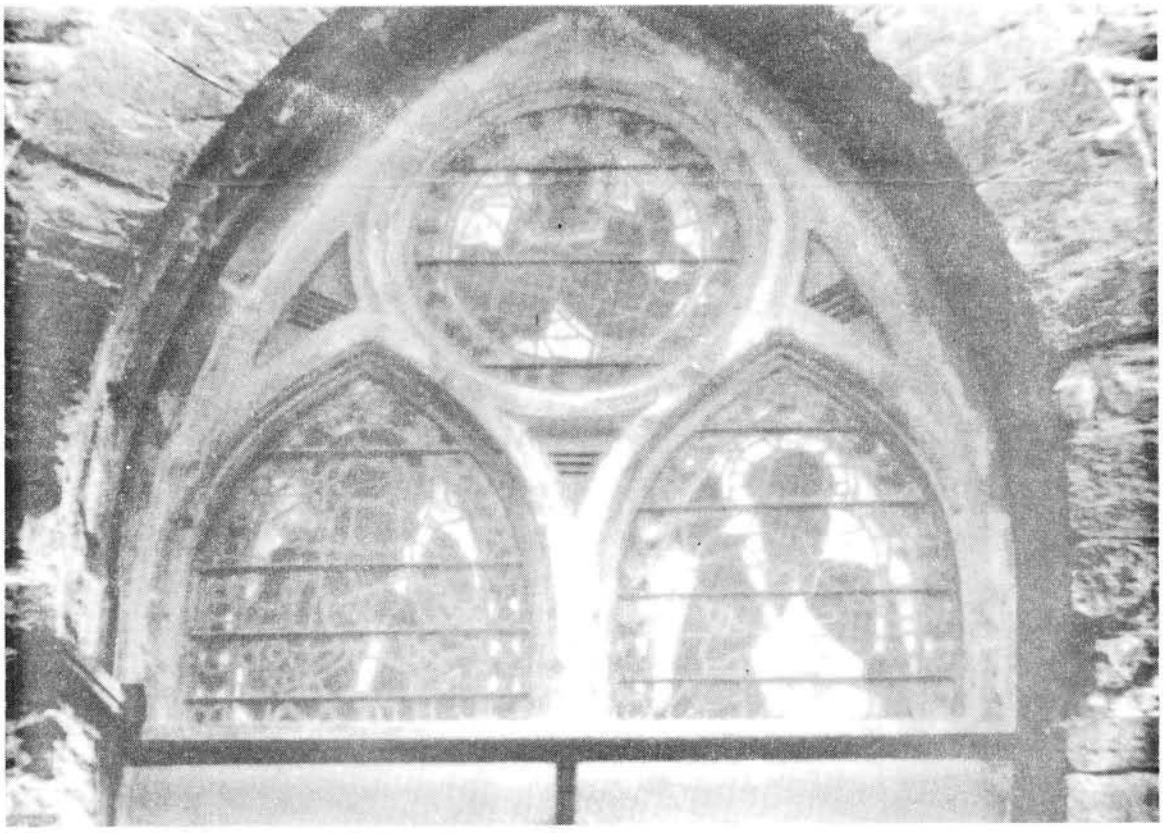

Fig. 4

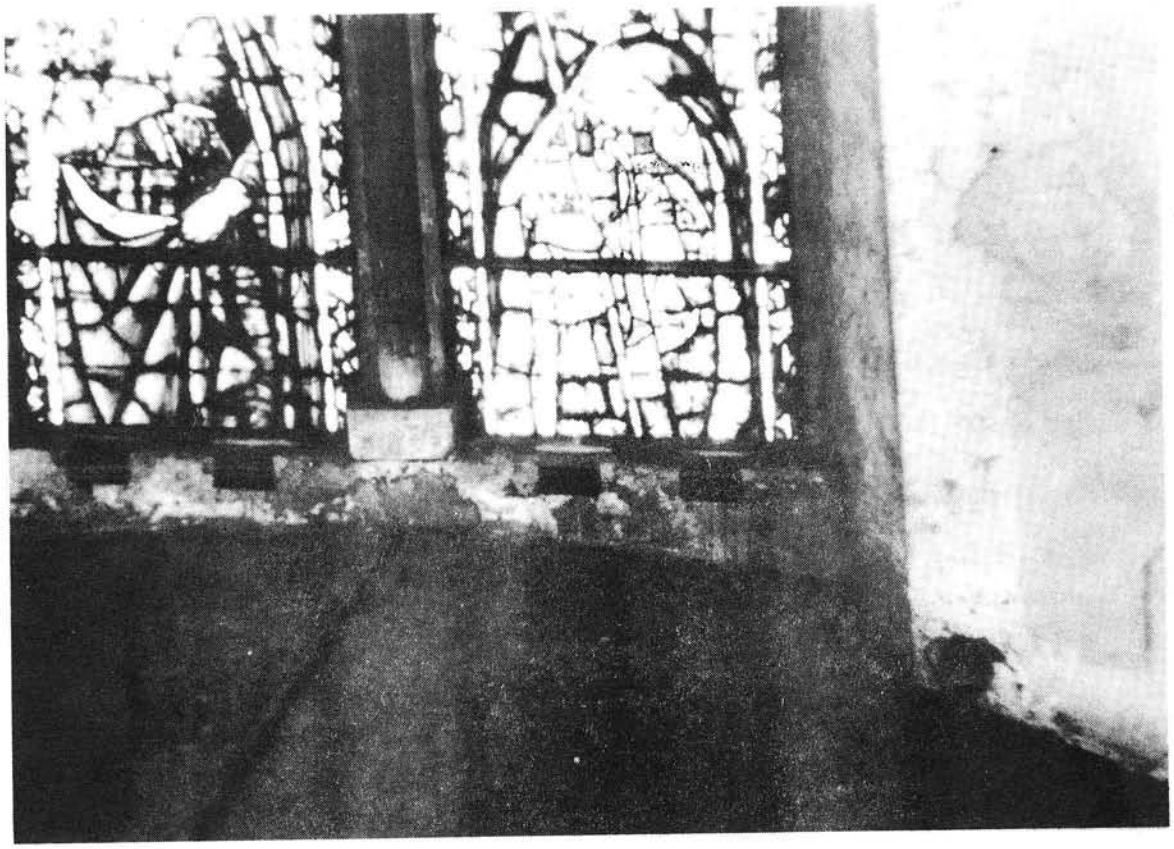

Fig. 5

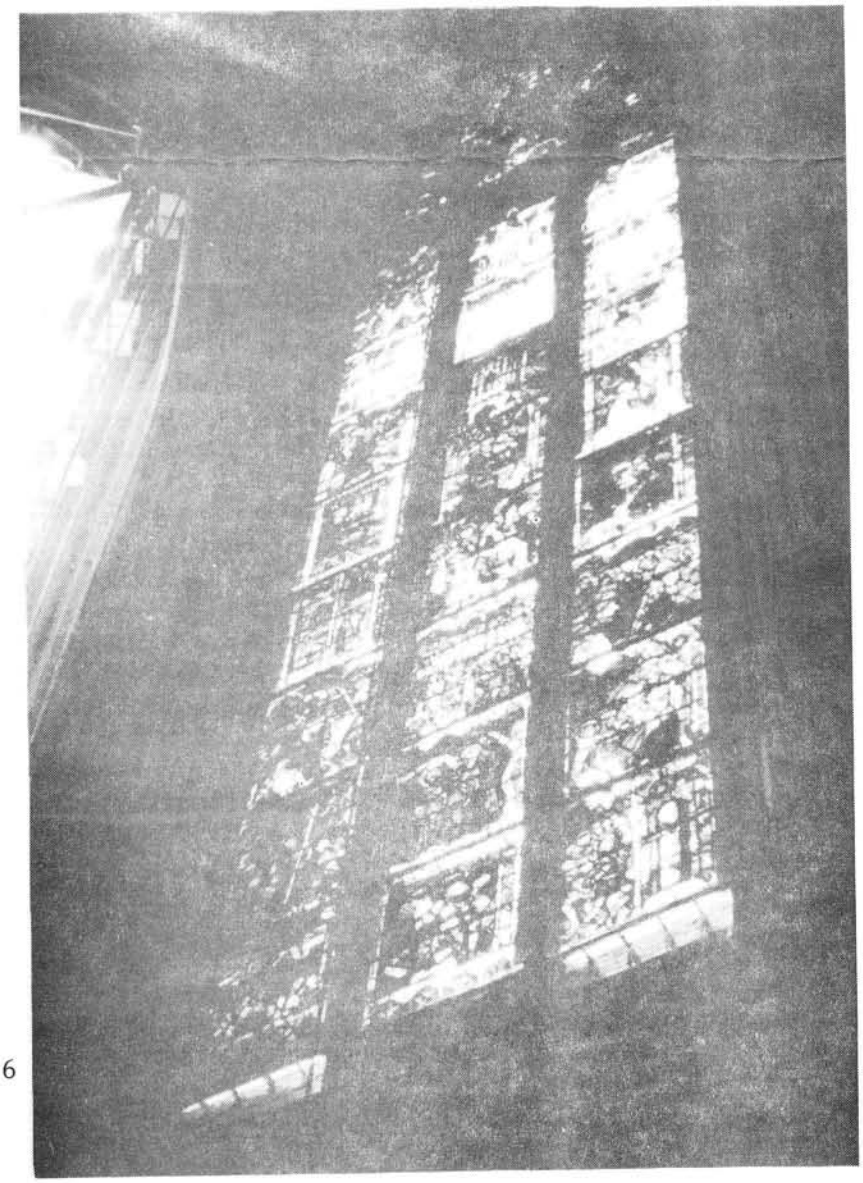

Fig. 6