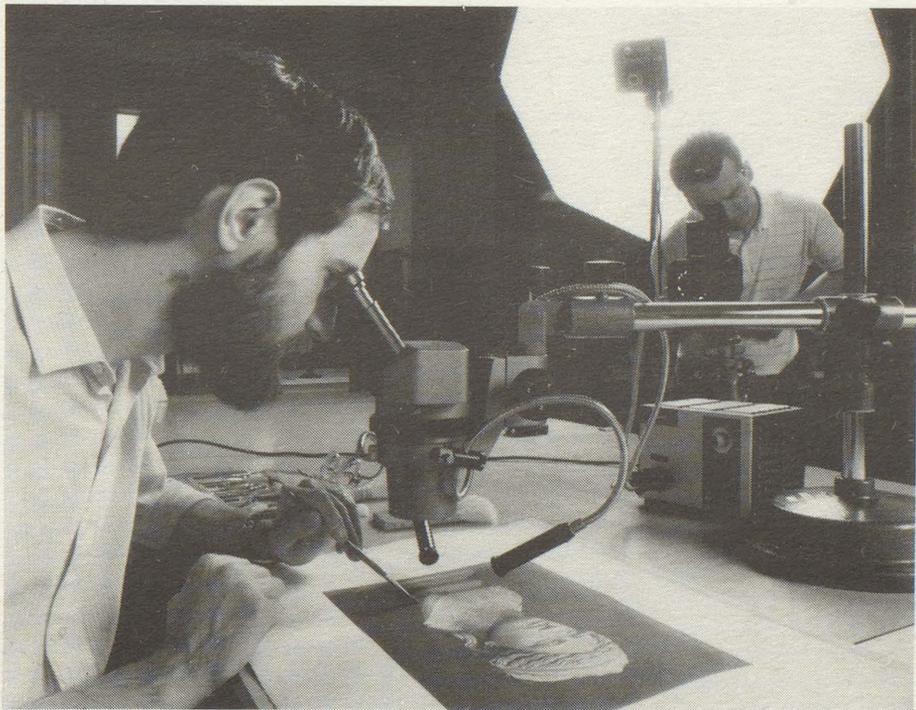

The Association of Historical and Fine Art Photographers

ISSUE NO 2

June 1987



Mr Alan Donnithorne being photographed by Mr Jim Rossiter. The photograph being conserved is a salted paper print by Roger Fenton of a bust of Juno from the British Museum's collection of Roman Sculpture published by the Trustees circa 1854, one of the earliest examples of fine art photography. Mr Donnithorne will be contributing to the next edition of Issue.

The Association of Historical and Fine Art Photographers

ISSUE NO 2

June 1987

EDITORIAL

It is just three years since I finally achieved something I had been thinking about for several years. That was to invite several of my friends and colleagues from other institutions to meet socially with the prime aim of 'talking shop', something we all tend to do when we meet socially but feel we shouldn't.

At that time I hardly knew Michael Duffett so he was not originally included. However when he heard of our activities he made himself known to us in the most delightful way by organising a 'Kodak at the Tate' day.

From there and at his suggestion our small group formed the basis of a steering committee whose aim it was to form our Association. The rest you know.

The first issue, reporting our inaugural meeting you have had so in this second issue we hope to set the style and put forward ideas for future member participation.

As we are all fortunately full-time employed it is only too easy to actually not do anything about contributing to either further issues of this Publication or having some contact with other members; I know, I am one of the worst offenders! However, I am convinced that, kept to the right level, if just a few of you can organise an article or a visit, the Association, us, will be richer for it.

On a general note the meeting for this year has been arranged for 27 October 1987 at the Tate Gallery and is being sponsored by Kodak Ltd. More of that nearer the time.

As you will see from the contents of this issue our committee members have supplied the items to "get it off the ground". The next one, probably in the Autumn should carry your contribution.

Suggestions for meetings and activities away from London are actively encouraged - why not write to me with an offer? Perhaps become a regional secretary. By the way our 1988 annual meeting is likely to be in Wales - more from George Nicol later.

We would like to publish members' letters if appropriate; those which pose questions could also be used, the answers could also appear providing they can be acquired without waiting six months or so until the next issue is published.

Any article or illustration submitted for publication will of course be assumed copyright cleared.

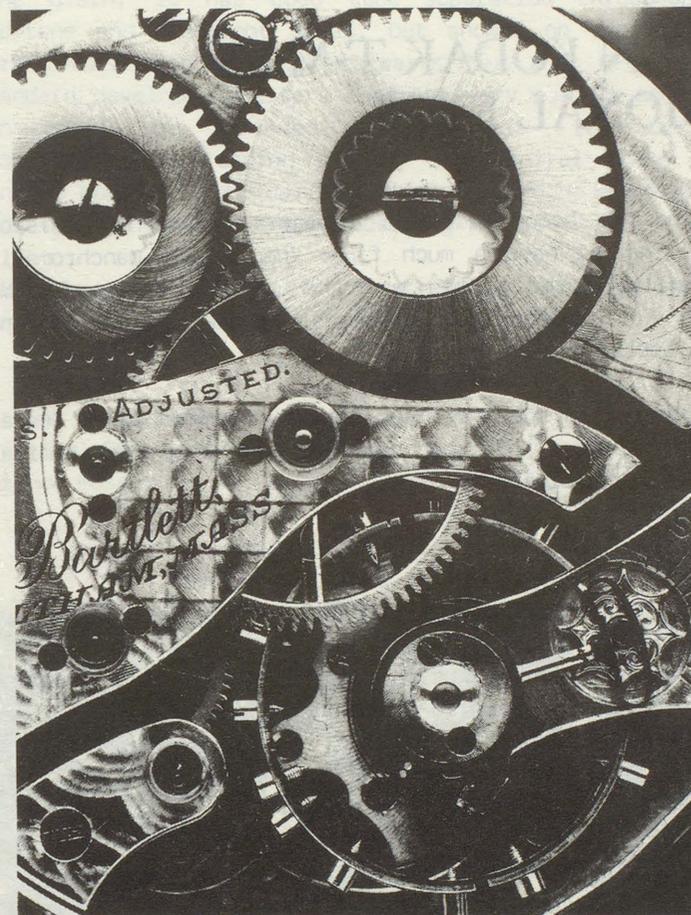
To finance further issues we will need to rely upon financial support from sponsors - for a half-page advertisement we are charging 25 pounds, so see what you can do.

I should like to take this opportunity of thanking my Trustees for allowing this issue to be printed at material cost only.

Brian Tremain
Chief Photographer
British Museum

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Photograph by Steve Rees

T-TIME

Until now, a photographer working in black and white had a choice. Extremely fine grain or high speed. Now 'Kodak' T-MAX Professional Films have taken the choice away.

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KODAK T-MAX PROFESSIONAL BLACK & WHITE FILM



REPORT ON KODAK T-MAX PROFESSIONAL FILM

This new emulsion has been hailed as a major advance in emulsion technology, claiming to have a much finer grain than panchromatic emulsions of similar speed. This was the obvious target for my initial tests. For comparative purposes, Kodak's Plus X and Ilford's FP4 were tested alongside.

Using the following film speed ratings and development times, equal mid-grey density readings of the same subject tone and similar negative contrasts were obtained.

FP4 125 ASA	8 minutes at 20°C D.76 diluted 1-1
Plus X 125 ASA	7 minutes at 20°C D.76 diluted 1-1
T-Max 100 ASA	12 minutes at 20°C D.76 diluted 1-1

Similar results were obtained using Microphen at the following development times but with a gain in emulsion speed.

FP4	8 minutes at 20°C Microphen diluted 1-1
Plus X 125 ASA	7 minutes at 20°C Microphen diluted 1-1
T-Max 100 ASA	9 minutes at 20°C Microphen diluted 1-1 (N.B. Much shorter developing time in Microphen)

Sections of the test negatives were photographed through the microscope. The grain structure at approximately 1400 times magnification producing the results shown below.

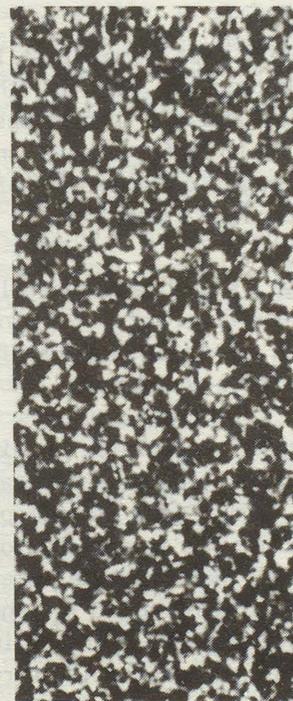
T-Max indeed does show very fine grain. This was also apparent when the negatives were printed through the enlarger, the grain showing on FP4 and Plus X well before it was seen on prints from the T-Max film. Even when printed on Grade 5 paper using a condenser head, a print 24 inches wide had acceptable graininess.

The tests have shown T-Max to be a very good film. In addition to its fine grain, it has good tone separation throughout the shadow, mid-tone and highlight areas, but showed no capability of defining more detail than the old stalwarts Plus X or FP4. Deviation from a standard development alters contrast very quickly and a high contrast can easily be achieved if required. It has good handling characteristics, loading readily into spiral tanks for processing (unlike Kodak's Technical Pan film), showed no evidence of processing faults, drying marks or manufacturing faults.

T-Max is well worthy of the attention of those where grain is a problem.

Derrick Chiverrell
Principal Photographer
Science Museum

FP4



PLUS X



T MAX



'HERE TODAY - HERE TOMORROW' Care and Preservation of Photographic Collections

Friends in the medical profession tell me that they go to great lengths at parties and social gatherings to avoid all discussion related to their professions. This results from past experience of pressing requests, by previously complete strangers, to "have a quick look at this rash". Reaction to my profession is often similar, although the 'patient' is generally an old negative or print which "is not looking too well recently". On my part, there is no reluctance involved, such is my passion for old photographs. What I do find disturbing is the very poor conditions in which so many people store their often very beautiful family photographic collections; cardboard boxes above radiators and plastic self-adhesive albums are not at all uncommon, and so often the cause of the aforementioned problem is right there.

This article is therefore based on the realisation that there is still a great necessity to make available information on care of the photographs. It will not go into the actual restoration; this is best left to conservation experts. Its purpose is to offer advice and recommendations for stabilisation and storage of photographic materials which will greatly contribute to their life expectancy.

It is easy to see why the photographic image is such a vulnerable medium. It has a large surface area of sensitive matter, bound together by gelatin, an organic substance which is highly susceptible to attack from air pollution, contaminated materials and fungus.

In order to diagnose problems in photographic materials, it is necessary to be aware of the potential sources of trouble which can arise from the original processing, and the life of the photograph since. Unless one has been personally responsible for the production of the photograph, this is extremely difficult. However, the older the image gets, the more likely it is that poor processing and storage will show itself in various forms of image deterioration. Anyone in possession or having custody of photographic collections should carry

out regular checks and react to the first sign of problems; the sooner trouble is spotted the greater the chances of saving the image.

Before any treatment is begun on original photographic material it is essential that a good duplicate is produced. Whilst every possible precaution should be taken during stabilisation processes, it is never possible to be 100% certain that no further damage will occur. Backs of photographs should also be checked at this stage for written information such as dates. If present, this should also be copied.

FAULTS COMMONLY FOUND IN NEGATIVES AND PRINTS

Fading of Image: Due to insufficient washing, resulting in residual fixing agent. This condition is more common in prints than in negatives, since paper is much more likely to trap chemicals than film or glass. Sometimes when prints have been stored face to face, residual fixing agent in one print can be seen to affect corresponding areas of the facing print.

Solution: Most prints, provided that they are not too fragile, can be successfully re-washed. Do approach this and any other treatment involving water, with the utmost care; in addition to the swelling and softening effects of water on the emulsion, the wet strength of paper varies enormously, irrespective of its apparent strength when dry.

Darkening the Image: Usually due to inadequate fixing, resulting in partial retention of unwanted, light-sensitive silver halides.

Solution: As before, provided that the material is in otherwise good condition, careful re-fixing and washing should halt this regenerative process whilst causing no further harm.

Fungus: This occurs in both negatives and prints, and is the result of storage at too high temperature/humidity. In warm, humid conditions gelatin is highly prone to fungal attack.

Solution: There is no fungicide safe for the use on photographic materials. At the first sign of fungal attack, the material should be removed to a dry area (a centrally heated room with a temperature between 15 degrees Centigrade and 25 degrees Centigrade would suffice), and left for a day or two to dry out. Fungus cannot grow between 68% relative humidity and most grows above 70%. When dry the fungus should be brushed off carefully using a soft brush. Never attempt to wash off fungus; most types of fungal attack actually

render the photographic emulsion water-soluble! If the material is thereafter stored in cool, dry conditions (relative humidity no higher than 50%) there will be no further growth. In some instances after a period of months, or sometimes years, the fungus will actually die, but correct storage remains essential; it is a fallacy to assume that killing fungus once will prevent re-growth.

Staining due to External Influences: Sometimes disfiguring problems lie not within the image itself, but with a medium with which the image is in contact, ie, the acid pages of an album, an unstable cardboard support or the wood, adhesive or varnish of a frame. It is usually not difficult to detect the culprit. Unstable backing will generally create overall discoloration; unsuitable (usually rubber based) adhesive can often be seen in the sweeping strokes with which it is applied; a contaminated frame will show itself as a dark border whilst the remainder of the print remains largely unaffected.

Solution: Needless to say, immediate separation of the image from the contamination source is essential. When this is a simple case of

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removing a print from a frame there is no problem; when prints are actually adhered to or with a destructive medium, treatment becomes more problematic. In this instance, copying prior to treatment is particularly important, including copying written information on the photograph or mount. Some adhesives are water-soluble, whilst most require chemical treatment and are therefore much safer in the hands of an expert. Before attempting water treatment, check for spotting medium and other water-soluble inks.

Nitrate Film: A chemically unstable material which presents serious hazards to the custodian of photographic collections. During its natural aging process it produces Nitrogen Dioxide which converts to Nitric Acid in the atmosphere and will cause deterioration of any photographic images in close proximity. It is also a severe fire risk from the commencement of the deterioration process. Decomposing nitrate film can ignite at temperatures as low as 50 degrees Centigrade! It was produced freely from the 1890's until the 1940's after which it was gradually replaced by safety film. As far as I am aware, none was produced after 1950. It is identifiable, particularly when deterioration has begun, by its yellow/brownish image, whilst the back is dimpled, rather like old mirror glass.

Solution: Nitrate material should be duplicated to a high standard, and then destroyed. If it must be stored for any length of time it should be kept cool in envelopes which prevent any contact between individual negatives.

STORAGE

Having successfully stabilised the images, correct storage, to avoid risk of further deterioration, is essential. Good storage will maintain the images at correct temperature and humidity levels, whilst giving protection from air pollution, harmful materials and dust.

Temperature/Relative Humidity. Ideally, all photographic material should be stored in a cool, dry atmosphere, in a temperature between 15 degrees Centigrade and 25 degrees Centigrade with a relative humidity between 30% and 50%. A reasonable compromise is a room with a dry atmosphere (such as that produced by central heating) which is kept at a fairly constant temperature, not exceeding 25 degrees Centigrade.

STORAGE MATERIALS TO BE AVOIDED

Cardboard boxes of unknown content: unstable cardboard is highly acidic and presents one of the greatest risks to photographic material.

Clear plastic or translucent negative/transparency envelopes of dubious quality: Many have a very high acid and sulphur content in both the material itself and adhesives therein.

There are now several companies, both here and in America who produce 'archival' photographic products. The contents of these products should be studied carefully; there is still a lot of variation in what is described as 'archival'. Truly archival products are guaranteed to be acid, sulphur and lignum-free, and have a neutral pH. Negative envelopes should be made from 100% rag or alpha cellulose pulp based paper. Transparencies should be stored in P.V.C.-free, plasticiser-free polypropylene material, which provides a safe environment whilst combining ease of viewing with reduced risk of damage by handling.

Glass negatives should never be stacked; they should be stored upright in archival quality boxes. Film negatives and prints can be laid flat in archival boxes. Be careful not to overload boxes and avoid mixing formats, which can cause surface marks and creasing.

Always use conservation-quality gloves when handling original photographic material, and encourage others to follow this example.

A final note. Whilst this article has dealt largely with historical photographic collections, much of the advice applies equally to modern material. It is worth bearing in mind that the images which we are all producing today will form the historic collections of future years. In no area is there more truth in the adage that 'Prevention is Better than Cure'.

Marie Richardson
Reflexions Ltd
Frome
Feb 1987



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French to my mistress,
and German to my horse."**

Charles V Holy Roman Emperor
(1500-1559)

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(1986)

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PHOTOGRAPHY AT THE TATE GALLERY

Since its formation in 1961, the Photographic Department at the Tate Gallery has steadily broadened its horizons and increased its capabilities from its humble beginnings of just one photographer in two rooms, tucked away in an obscure corner of its basement, it has progressed to a very modern department, with staff totalling at times twelve or more. Originally, it was set up purely as an aid to conservation, but soon began to serve curators in the main collections, as well as departments such as Archive, Education, Exhibitions, Press, Publications and Technical Services.

In 1979 an extension to the Tate was completed, and a new purpose built department was opened, incorporating supplementary services such as graphic design. It was re-equipped and a new phase began.

Basically, the Department consists of two main studios 30 feet square, which can be joined to form one large area. These studios were designed so that at one end against a matt black wall a motorized easel could hold paintings up to ten feet square, whilst at the other end sculptures could be brought in on a motorized travelling hoist, whilst along the flanking wall, a reproduction of the display gallery walls was incorporated, so that when required, the two studios could be joined, forming a reproduction of the gallery display conditions. There are also two other smaller copying areas. These are served by a 20 feet square finishing room, two black and white processing rooms, one housing a Hope processor, the other a tank line with nitrogen burst and printing rooms with five enlargers with Veribrom, Dektomatic and Luth paper processors. There are also the usual offices, security rooms, stores, etc.

Photography of paintings is routinely carried out using X-rays, infra red and transmitted light to penetrate the surface in varying degrees. This helps the restorer to formulate its structure and the curator to research the artist and picture history. Under fluorescent ultra violet light the different pigments and retouchings become visible,

while the surface can be studied and recorded by reflected light and raking light, with the exciting possibility of utilising photogrammetry.

The use of close up and photomicrography is an obvious necessity.

Sculpture not only has to be photographed using all the modern scientific techniques in collaboration with conservation and to show its surface record, but must be presented with full creativity for publication.

Whenever asked "where do you work", as soon as the Tate Gallery is mentioned, the reply is usually "Oh, I see, you photograph the paintings". This is the understatement we have constantly to correct. Like all other museums and art galleries, the range of photography is as varied as any industrial or commercial concern. The Tate's end product is indeed paintings, etc. displayed in rooms and galleries, but behind the screens there is a factory and office block which has similar functions to counterparts throughout the world, and demands a photographic service which ranges from the scientific through architectural, industrial, commercial, advertising, and on to photo-journalism. The fine art photographer must now be truly versatile. All staff hold photographic qualifications, but there is obviously in-house training, not only in the various specialised techniques necessary in this particular field of fine art, but training in the general approach and handling of fine art objects, along with the gradual awareness of the subject as a whole. The Department also has a policy of encouraging students from the recognised colleges to undertake periods of industrial experience and to take advantage of these special techniques.

The past five years has been a period of rapid change. Special projects such as tape slide programmes, using up to six projectors controlled by a computer have come, and are already being replaced in the Tate by video. A video studio is at present being set up with sound and editing facilities.

The Tate has expanded and taken on new projects, such as Tate in the North, a national gallery of art in Liverpool; the Barbara Hepworth Museum at St Ives in Cornwall; and in 1987 will be opening its latest extension, the Clore Gallery, a building financed by the Clore Foundation and dedicated to the Turner Collection. The Department is

involved in all of these projects, and certainly not least is its commitment in photographing, we think, about 30,000 Turner watercolours and drawings transferred from the British Museum, in both black and white and colour; but that's another story.

Michael Duffett
Chief Photographer
Tate Gallery



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DAMASK TABLECLOTHS

The photographer who works with art and craft subjects will, at some time, find a damask tablecloth in front of his lens. They refuse to respond to standard lighting techniques. One can plainly see that the large white cloth is covered with patterns and pictures that become visible as one moves about, but from any single viewpoint a large part of the design disappears. Illustration 2 is a diagram of the weave showing how the design is created and revealing the strong directional lines of the threads that can be exploited by lighting to reveal the patterns.

With most damasks, especially the large and complex ones, the best camera position is not square in front of the subject, but very much to one side, perhaps even at 45 degrees. The ideal position will vary with the damask and the amount of contrast required on the negative. The more square the camera is to the subject the less contrast one can achieve between the lights and darks of the design (as a rule).

Any kind of light can be used, flood, spot and flash. Floods work reasonably well on small subjects, spotlights are better especially on large subjects. Even lighting is a struggle to attain but with several spots it can be achieved. The lights also need to be placed at an angle to the damask. They may provide satisfactory results from the camera side. Illustration 3. Or perhaps from the opposite side. Illustration 4. The exact placing of the lights will have to be determined visually. Rarely do two damasks respond to the same lighting arrangement.

The wise photographer will ensure that the damask he is to photograph is free from folds and is pinned up nice and tight to prevent any sagging and bulging. Acute lighting will emphasize any folds and wrinkles.

Swing on the camera back will be necessary to correct some of the distortion that is not too large in the frame. Illustration 6.

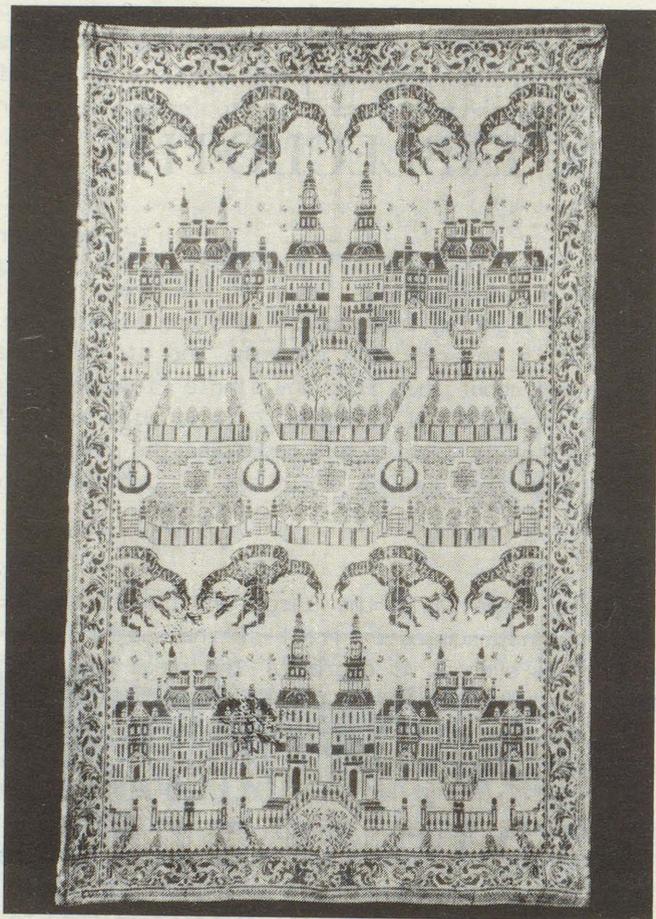


Illustration 1

To use a high contrast negative material at this stage makes even lighting difficult, we tend to use FP4 or similar.

This negative is then put into the enlarger and a squared-up film positive made. Shading if necessary is done at this time. The final film negative is made from this positive to the required size, on material that will give the desired printing contrast. Occasionally, a negative print is preferred because it gives a light design on a dark background. Illustration 7.

Peter Macdonald, Principal Photographer,
Victoria and Albert Museum.

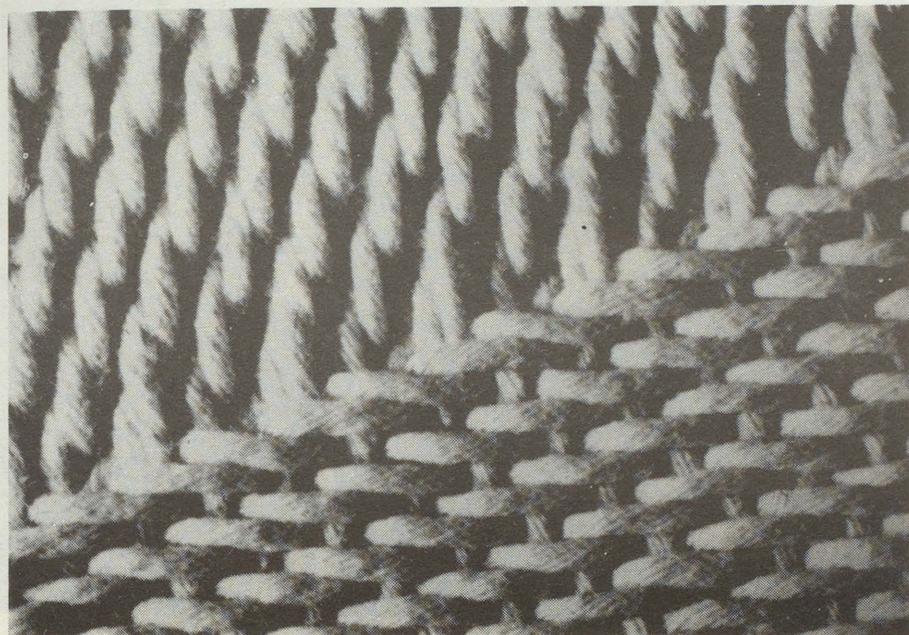


Illustration 2

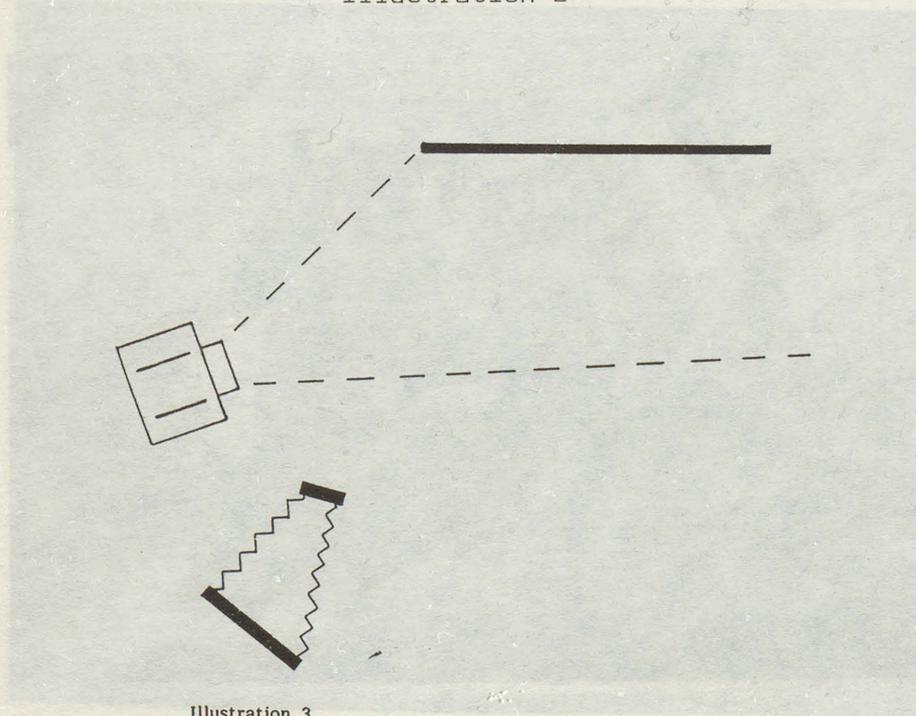


Illustration 3

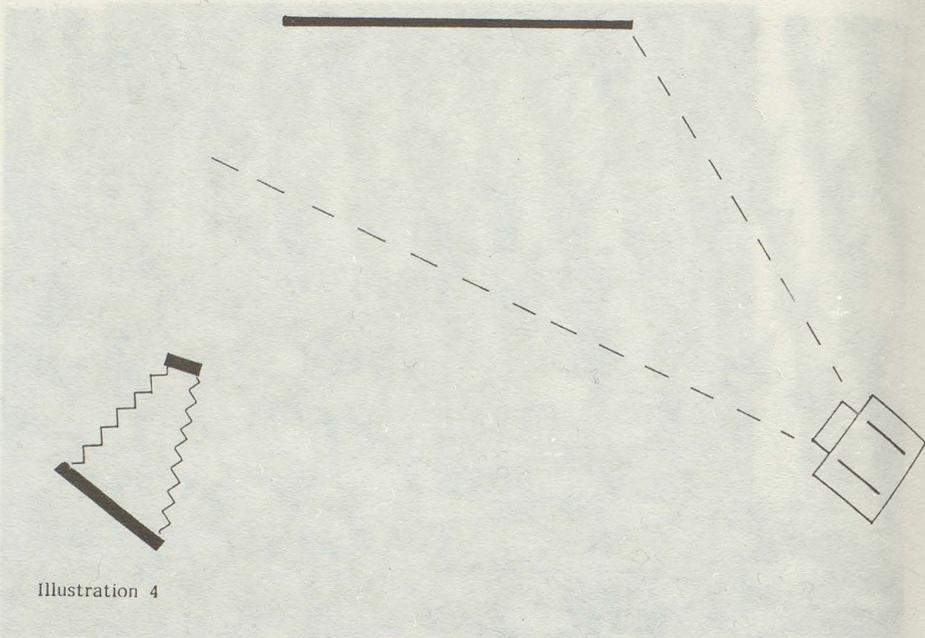


Illustration 4

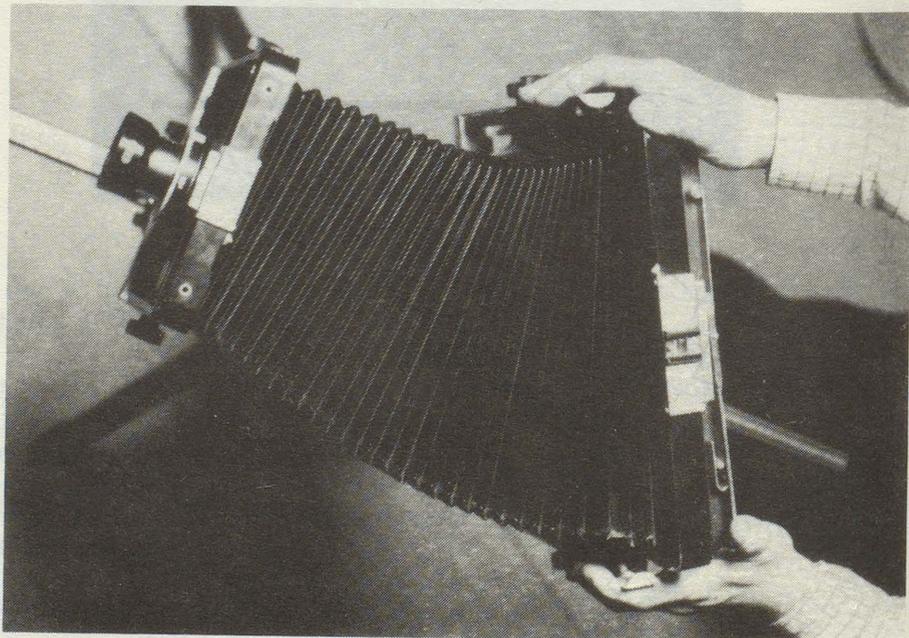


Illustration 5

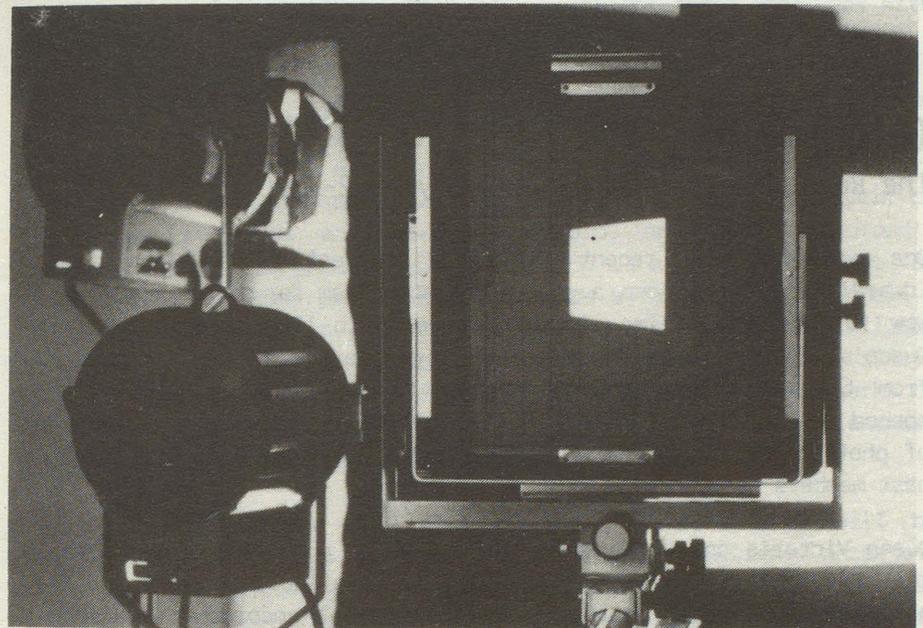


Illustration 6

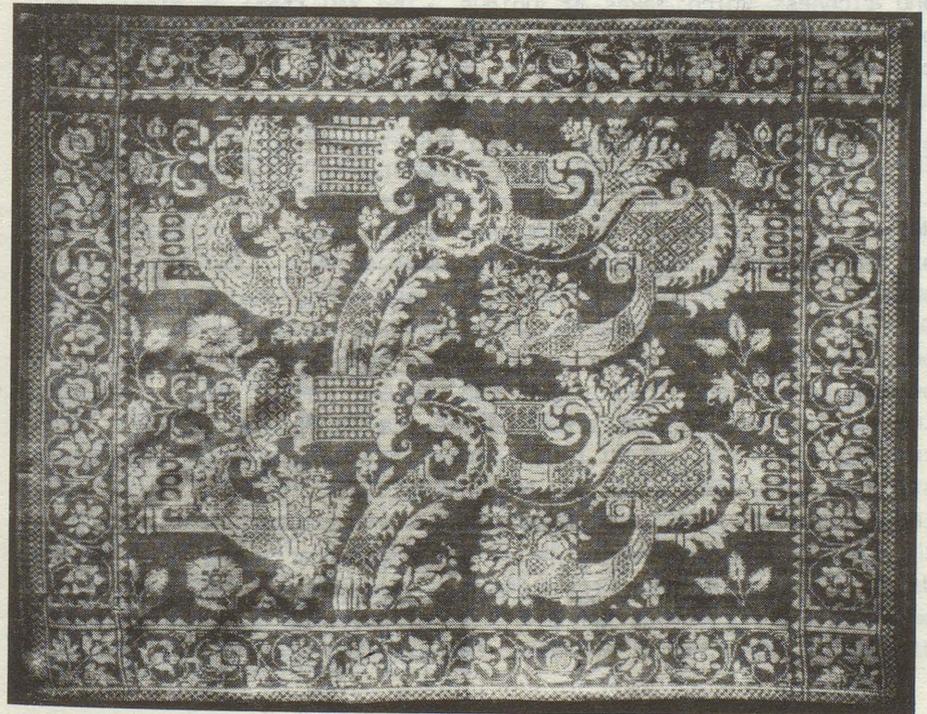


Illustration 7

CROWN AND CAMERA

The Royal Family and Photography 1842-1910

One example of the recent revival of interest in the Victorian and Edwardian eras has been a growth of enthusiasm for early photographs. Now for the first time since its opening in 1962, the whole of The Queen's Gallery is to be devoted to a display of historic photographs from the Royal Archives at Windsor Castle. The exhibition which opened in March 1987 illustrates much of the importance in the history of photography, while giving a fascinating insight into the lives of past members of the Royal Family.

Queen Victoria and Prince Albert first began acquiring photographs in the 1840s. The best work of the time was available to them, and they and their descendants naturally chose material according to personal taste. The Collection which consequently developed has a diversity and richness which makes it unique. The 240 items on display have been selected from many thousands to show the wide variety of its contents, and we hope that every visitor to the exhibition will find something of interest.

The exhibition divides into several categories, of which the largest is portraiture. There are many pictures of British and foreign Royalty, including some charming ones of children. In addition, there are people associated with the Court, such as Baron Stockmar; those in public life, such as Lord Salisbury; musicians, including Liszt and Sullivan; celebrated figures, from Lord Raglan to Buffalo Bill; and people renowned for unusual achievements, such as a couple married for seventy years, and the tallest man in the Army. Other categories include ceremonies; the armed forces during the Crimean and other campaigns as well as in peace time; and genre pictures, in which studio groups were used to create particular effects. There is a large amount of topographical material which includes Royal visits to the Middle East and India. Two of the most interesting items are the daguerreotypes of the Great Chartist Meeting in 1848, which are possibly the first ever taken of a public gathering. There is also a display of photographic objects, such as a tea service decorated with

photographs, a bracelet set with twelve portraits and a small box with surprising contents.

Work by nearly 100 photographers includes daguerreotypes of William Kilburn, portraits, views and military studies by Roger Fenton, Crimean views by James Robertson, genre pictures by Oscar Rejlander, portraits by Julia Margaret Cameron, studies in France and Spain by Edouard-Denis Baldus and Charles Clifford, and Francis Bedford's photographs of Coburg, commissioned in 1857 as a birthday present for Prince Albert. Other photographers include W. & D. Downey, Cundall & Howlett, Gustave Le Gray, Charles Bergamasco, Dr John Murray, William Lake Price, Bourne & Shepherd, William Bambridge, Camille Silvy, A.A.E. Disderi, and Ross & Thomson. The final section shows works by three Royal photographers: Alfred, Duke of Edinburgh, Queen Alexandra and her daughter, Princess Victoria.

The catalogue, to be published by Penguin Books Ltd, will be extensively illustrated. It will contain detailed captions, notes and commentaries on aspects of the Collection, largely drawn from original sources in the Royal Archives and elsewhere. It has been written by Frances Dimond, Curator of the Photograph Collection in the Royal Archives, and Roger Taylor, Keeper of the Kodak Collection at the National Museum of Photography, Film and Television.

Owing to building works the exhibition will be closed temporarily from the middle of October to late November 1987, finally closing in February 1988.

OPENING HOURS

Tuesday - Saturday (and Bank Holidays)
11 am to 5 pm
Sunday 2 pm to 5 pm
Closed Mondays (except Bank Holidays)

ADMISSION PRICES

Adults - £1.10
Students, pensioners, children
and registered disabled - 50p

SOME THOUGHTS ON ARCHAEOLOGICAL PHOTOGRAPHY

Prompted by a visit to Trondheim, Norway, Summer 1979

Since the Ice Age the land mass we know today as north-west Europe has constantly been rising from the sea. This, coupled with a warmer climate, made it possible for man to move further north. In the mountains of Norway there is evidence of Stone Age civilisation, but in Trondheim there is little evidence of organised living much before 1000 A.D. FIG.1.

Documentary evidence really only begins with the Sagas, of which there are some dozen, but unfortunately these tend to conflict. With this uncertain background, it is therefore essential that every opportunity be taken to confirm historic evidence as it presents itself through excavation, made possible by rebuilding programmes, etc.

The Norwegian Government, through the Riksantikvaren (the Central Office of Historic Monuments) has excavated in Trondheim since 1971.

It is not just for nostalgia, nor academic enlightenment that this type of investigation is undertaken, but rather more an attempt to learn from our predecessors, through their fortunes and misfortunes, that we may safeguard and improve our own and future lifestyles.

During the past eight years careful and methodical investigation, through archaeology, has provided a clearer picture of life in Trondheim, the medieval capital of Norway. FIG.2.

In order to secure the maximum benefit from such an archaeological investigation, experts in many disciplines and from several nations have been engaged. It is with recording through the medium of photography that this paper deals.

The camera does not lie (or at least not very often) is a well-known saying and worthy of being repeated, for images recorded through the medium of photography are so common-place today that they are taken for granted. However, it is true to say that photography used

carefully can and does prove a valuable and indisputable record; giving fine detail that by any other means would be difficult and time consuming to complete. FIG.3. and FIG.4.

I do not intend to explain how images are formed by lenses, nor how the image is captured on plate, film and paper, for there are many books dealing with the basic and advanced principles of photography. What I intend doing is to explain some methods I have found useful.

Before undertaking any assignment, be sure to establish the reasons for photography and to what use the photographs are to be put.

The main features being exposed at the excavations in Trondheim were the remains of medieval wooden structures which were houses, alleyways and roads. (Small finds will be dealt with later.) Wood that has been buried for anything up to seven hundred years tends to be fragile, so the most careful excavation with towel and brush is necessary. Some of the remains of wooden planks found here were so thin that if they were allowed to dry they would just curl up and die! The procedure is to photograph, draw and then move on to the next phase of excavation.

The photographic requirement was to show the maximum amount of detail in layout and structure. An area such as a floor, having been prepared for recording, looks rusty coloured, through to black (there were quite a lot of burnt layers). Not all the wood however was reddish and often the only way it could be distinguished from the surrounding earth was by its different texture. Even with wood that had more colour the use of coloured filters did little to help differentiate it from the soil. A yellow or orange filter occasionally gave the best separation; making the wood appear lighter than the surrounding soil which in turn had to be kept wet to keep it dark.

Generally such an area looked at its best when the surface of the wood was just dry with the surrounding soil still wet. FIG.5. There are exceptions to any rule and often one here was dealing with small areas, perhaps with tool marks on them, these showing up best when the surface of the wood was wet. FIG.6 and FIG.7. This is because a glossy surface is mirror-like and gives a higher contrast than a dry, matt surface. FIG.8. The same principle applies to artifacts photographed on and off site. FIG.9 and FIG.10.

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Because a single photograph is only a two dimensional representation of the object being photographed the choice of viewpoint is of prime importance, (with stereoscopy the third dimension is apparent and therefore one pair of photographs from one viewpoint may suffice). So occasionally a different view of the same object may be beneficial in interpreting layout and form. FIG.11 and FIG.12.

Light is naturally of great importance. Not only must there be enough of it to allow the desired aperture and shutter speed to be used for correct exposure, rendering adequate depth of field and appropriate arrestment of movement, but it should ideally come from a direction that it will model the subject by highlight and shadow to give the maximum information. Often the most desirable direction of light is that which comes from the side to slightly behind and above the subject when viewed from the camera position. Light that comes from behind the camera will give a very flat effect.

Usually photography is called for as soon as the subject is ready, so quite a lot of luck is needed! Knowing what lighting is desirable for any given subject it might be possible to arrange with the site supervisor for photography to take place at the best time. Hazy bright days are usually the most suitable.

FOCUS - A good policy is to focus one third of the way into the subject (assuming it to be three dimensional), using an aperture small enough to achieve the desired depth of field. Depth of field scales on lens barrels give some indication of the distances covered, however, critical focus will only be achieved at the actual distance focussed on. If the nearest to farthest distance is too great to achieve overall acceptable definition be sure that the part of the object nearest the camera is acceptably sharp, it looks better that way. A camera with swing and tilt lens panel and back is really the answer to most focus and perspective problems, but will not be discussed here.

LENSES - Standard, wide angle or telephoto lens? The choice will be obvious from the situation, area to be covered, most advantageous viewpoint, desire for differential focus, etc. In practice most general views are usually best covered by semi-wide to wide angle lenses (35 mm, 28 mm, 21 mm focal lengths for 35 mm cameras). Smaller more detailed areas with a standard, macro or semilong focal length lenses (50 mm, 55 mm and 135 mm cameras). The lenses I used on this excavation were a 50 mm macro as a standard lens and a 35 mm 'shift' lens which allowed a certain amount of vertical correction when tilting the camera up or down. When buying lenses do not necessarily accept the first one (however much you pay for it), test it thoroughly before parting with your money. Eight Olympus Macro Lenses were tested before I was satisfied with the definition. It should go without saying that the darkroom equipment must be of comparable quality.

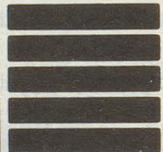
SCALES - Debate continues about the size and scale one should use, however, quite a good rule of thumb is one where the size of the scale will occupy at least one tenth of the picture width. White and black printed scales should be avoided, for the white will 'flare' into the black when exposures are on the generous side. When in the field, for medium to close shots, I usually combine a magnetically north facing arrow with a centimetre scale which is black and blue - (very useful for orientating oneself afterwards). Other than a compass-orientated

scale, scales are normally placed at right angles to the axis of the lens, which is usually parallel with the bottom of the picture.

Sequential photographs are useful if rebuilding is to take place later, as shown in FIGS.13-16. Overall photographs of the site are usually only useful as public relation aids. FIGS.17-19. FIG.19 brings us to the drawing stage. One can debate at length the value of drawings versus photographs, in fact both are valuable. The drawing can be selective but the photograph is very much quicker and records everything (compare FIGS.3 and 4).

Small finds are usually best photographed off site when they have been cleaned and/or conserved. There are however several reasons for photographing in situ. FIG.20. This half of a silver penny with its impression is an example, for there being only oxides of the metal left, it was likely to collapse upon removal. Fortunately this was not the case and the coin was photographed in the studio after conservation. FIG.21.

The same principles apply to off site photography regarding viewpoint, lighting and focus, but of course in the studio one is not dependent upon the weather, etc. Firstly let us consider the photography of



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human remains, always a dramatic subject. The Riksantikvaren's human osteologist Christine Hanson explained what details were to be recorded from normal, diseased and malformed bones. FIGS.22-26 expand this theme. Following a suggestion published in the American Journal of Physical Anthropology, Ms Hanson has built the most useful stand and FIG.27 shows how it can be used to allow gravity to aid the correct articulation of the jaw. The subject now being upside down the lighting had to be adjusted accordingly and FIG.28 shows the simple set-up which was used to achieve the desired soft yet directional light as if coming from above. The background was lit separately, with just a little light from the background lamp spilling onto the skull. FIG.22. For crania without manibles one can work the right way up by allowing one of the perspex rods to pass through the foramen magnum and come to rest inside the skull. FIG.29. To achieve a similar floating effect with other objects, they were placed on a sheet of glass. There are two points to watch for with this method: (i) make sure the shadow of the object on the background is outside the picture area, and (ii) there is no reflection of the camera or operator in the glass. By shielding the camera from the light or by poking the camera lens through a hole cut in black paper one should achieve the desired effect. FIGS 21, 30-34 were made using this method. The lighting was usually direct, from a single 500W reflector bulb, placed strategically to fulfil three functions: (i) lighting the object from the most advantageous position, (ii) reflecting off white paper as a full-in light to lighten the dark shadows, (iii) to pass through the glass to illuminate the white or coloured background, (which being further away receives less light than the subject and appears grey in comparison with the lighter highlights of the subject). To find the best position for the light I usually take it off the stand, moving it around the object, viewing through the camera or at least from the camera position.

A floating effect is not always to be desired, in fact it is not even practical to place large objects on glass. These may be placed on any background, although usually a plain background which contrasts somewhat with the object is best. Heavy shadows must be avoided as they tend to change the shape of the object as one cannot see where the edge of the object ends and the background begins.

EXPOSURE - Avoid high contrast lighting if possible and as a general rule expose for the shadows with black and white film, but with colour reversal film expose for the highlights. If the object is small and

on a white background, increase the exposure one and a half to two stops. The reverse is true should the situation be reversed and the object is a small white one on a black and very dark background.

FILM AND PROCESSING - This of course is a very personal thing as there is a wide choice of manufacturers and emulsions. However throughout this excavation I used Ilford FP4 developed in Microphen for my black and white requirements and Kodachrome 64 and Agfachrome 50 for my colour shots when the light was bright. Kodak Ektachrome 200 gave very good results on dull days. The colour processing was undertaken by a laboratory.

REMEMBER - Establish why the photograph is being taken and how it will be used and you will be half-way there. Use the largest format camera, it is practical to use (preferably one with movements) putting it on a tripod when possible. Light the object to retain its character.

ACKNOWLEDGEMENTS - I should like to thank the Riksantikvaren for their hospitality and allowing me to use their photographs. Erik Jondell who directed the excavation during my stay. Ian Reed, Assistant Director. Inger Sofie Lillest, Brian Hodgkinson, David Fine, Gerry Pratt and Tom Chilton, site supervisors who were responsible for the preparation of the site and drawings, assisting with the captioning of the photographs and Lynn Blackmore for editing my manuscript. All the diggers - too numerous to name, for their help on site. The National Maritime Museum, Greenwich, for allowing me two months secondment.

Brian Tremain
Chief Photographer
British Museum



FIG.1 North West Europe. Arrow indicates Trondheim.

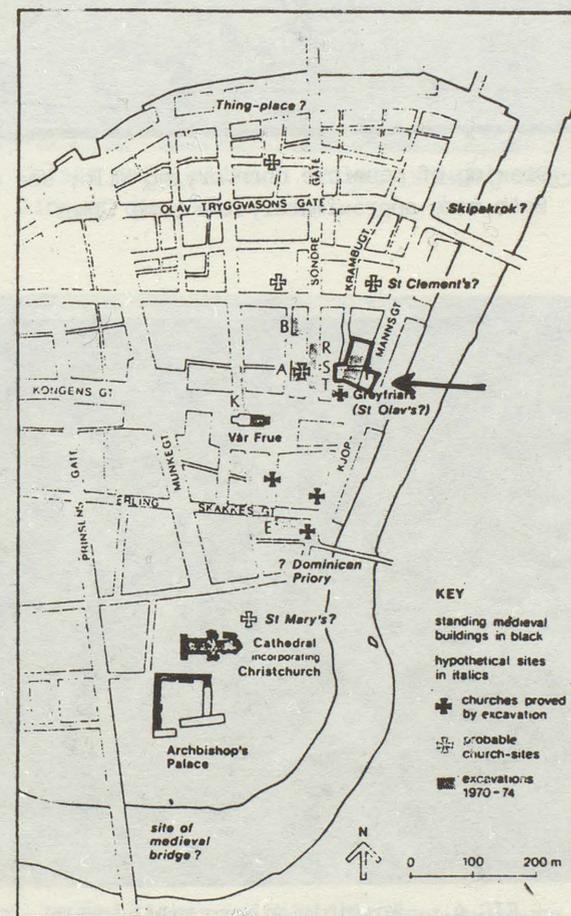


FIG.2 Trondheim. Area of excavation shaded.

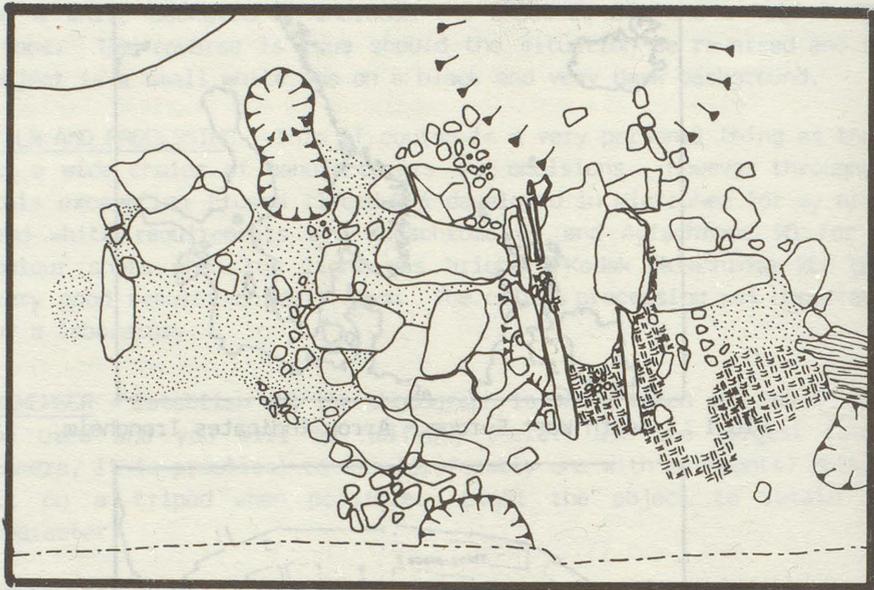


FIG.3 Drawing of possible corn drying kiln; see also FIG.5.
Both made approximately the same time.



FIG.4 Possibly a corn drying kiln.



FIG.5 Joists for a medieval street, showing middle
line of division.



FIG.6 Dry, reused timber, within 13th Century house.

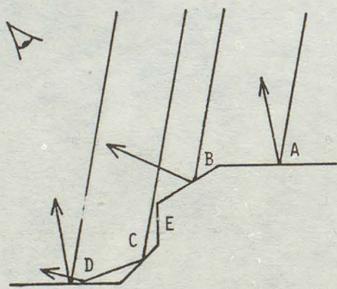


FIG.7 Wet, reused timber, within 13th Century house, purpose of cuts unknown.

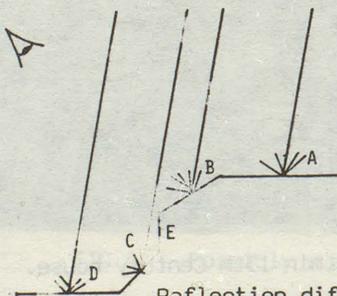


FIG.9 Possibly a ships timber shown in situ (as the base of a lafted well, see FIG.13).

Fig.8



WET SURFACE A & D will be brightest
 B Next
 C Next
 E Almost Black



DRY SURFACE A,B,C & D will appear much the same as each other
 E will still be almost black

Reflection differences between wet and dry surfaces.



FIG.10 As in FIG.9 but off site.



FIG.11 Plan view of flu to a fire.



FIG.12 End view of flu as seen in FIG.11.



FIG.13 A well with laft construction.

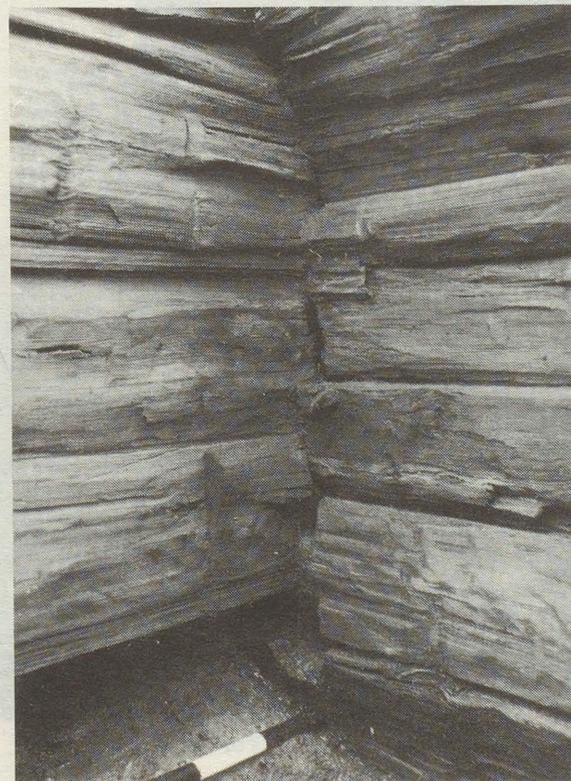


FIG.14 Detail of a corner of a lafted well, (note absence of a beam above scale).

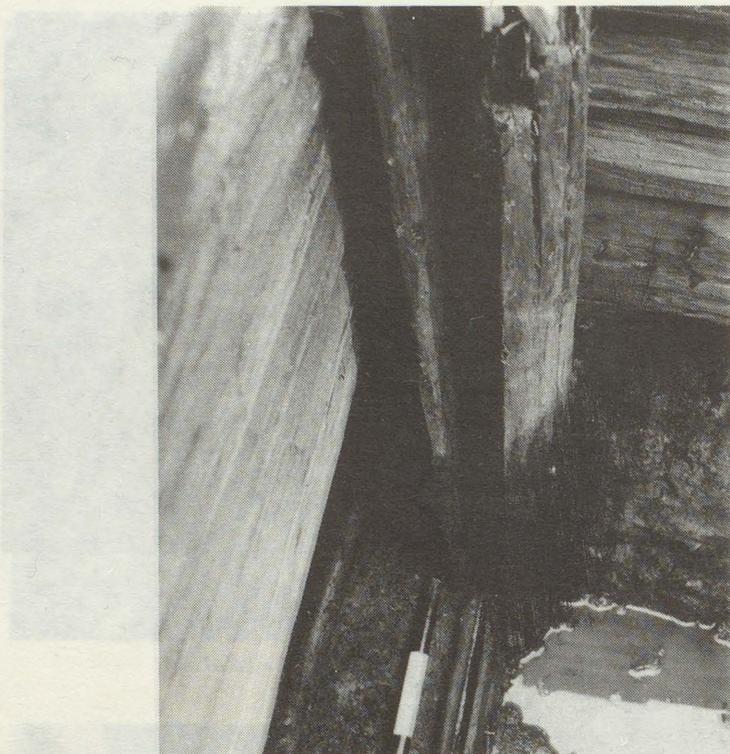


FIG.15 Detail of a corner of a 'sleppveg', together with an earlier lafted well behind it. Note the characteristic grooved post.



FIG.16 As FIG.9 showing construction pit for well, the four posts are from earlier waterfronts.



FIG.17 General view of site looking south-west, taken during the second week in August.



FIG.18 Soft back lighting on an area of outside planking being cleaned for photography.

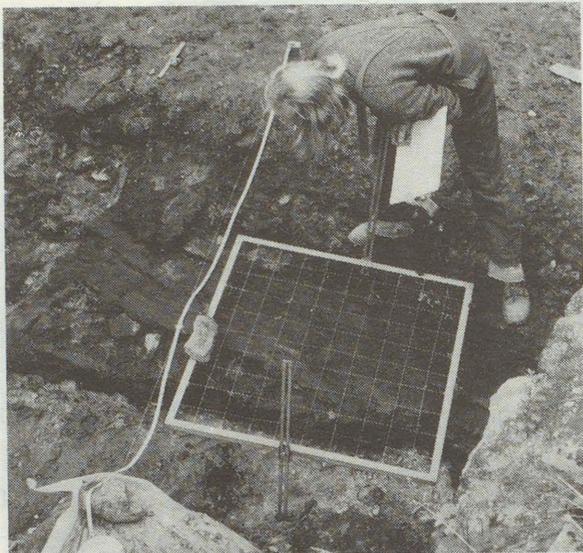


FIG.19 Following photography an area of planking is drawn. If there is much separation between the grid and the surface being drawn a plumb line will be used to ensure that the eye is in line with the reference line.



FIG.20 Half a coin with impression on the left, photographed in situ with electronic flash head very near the ground to give the maximum amount of modelling.



FIG.21 The same coin as in FIG.20 after conservation. Photographed on glass in the studio.

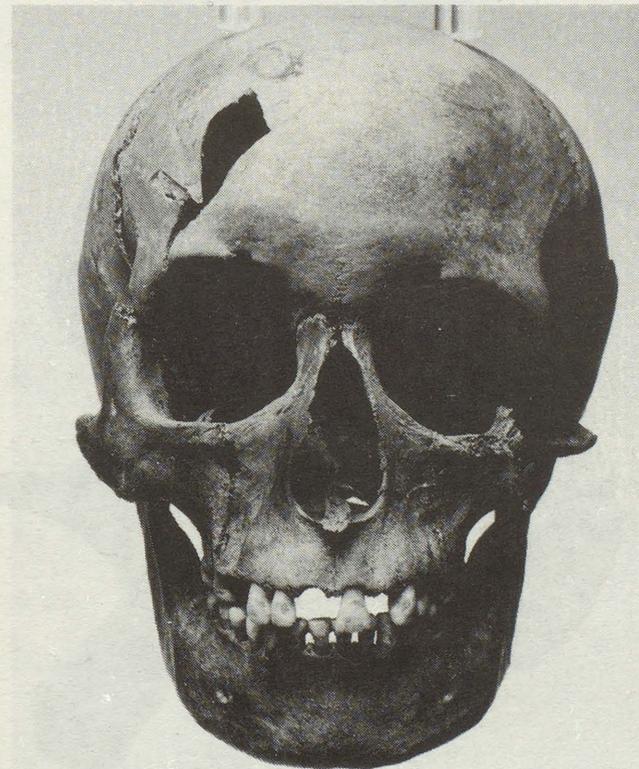


FIG.22 Norma frontalis photographed on the plexiglass stand.

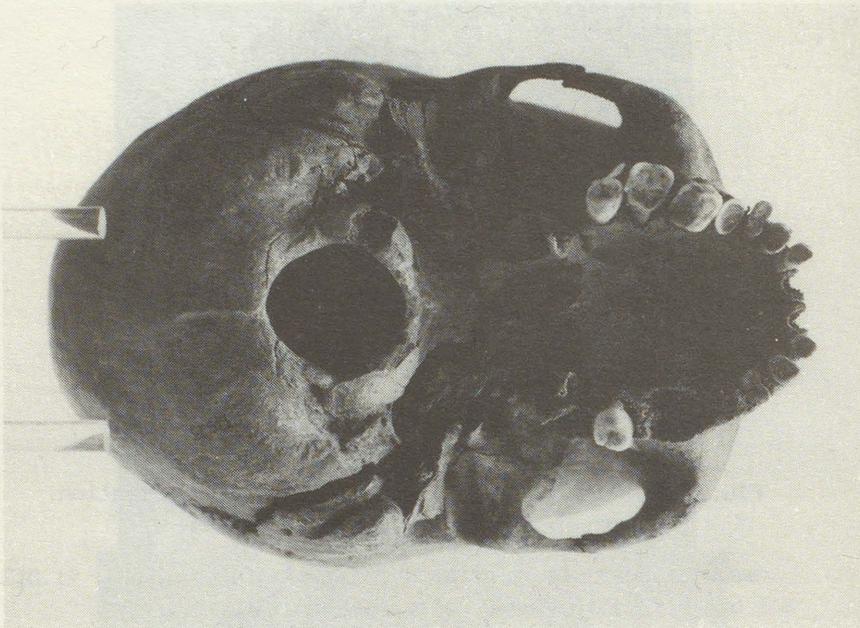


FIG. 23 Norma basilaris.



FIG. 24 Immature human vertebra (note billowed margins).

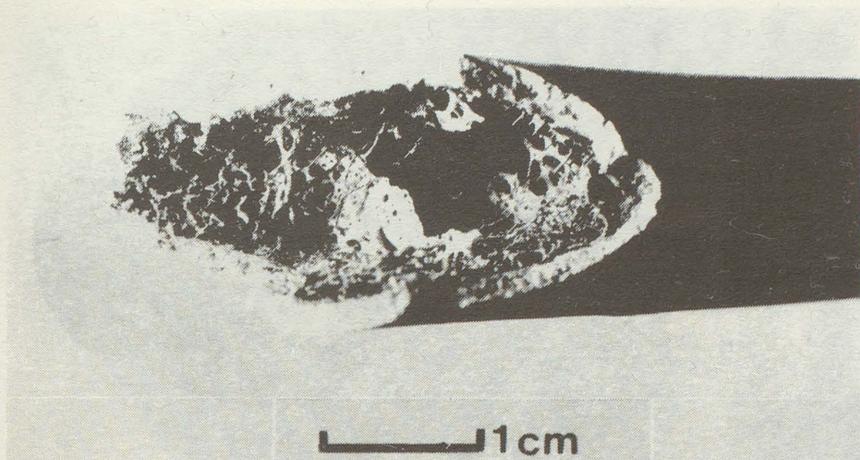


FIG. 25. Immature human humerus showing two Harris lines (lines or bands of increased radiopaque density; growth arrests scars) in medullary cavity.



FIG. 26 Mushroom head femur; deformation probably due to the prolonged articular displacement.

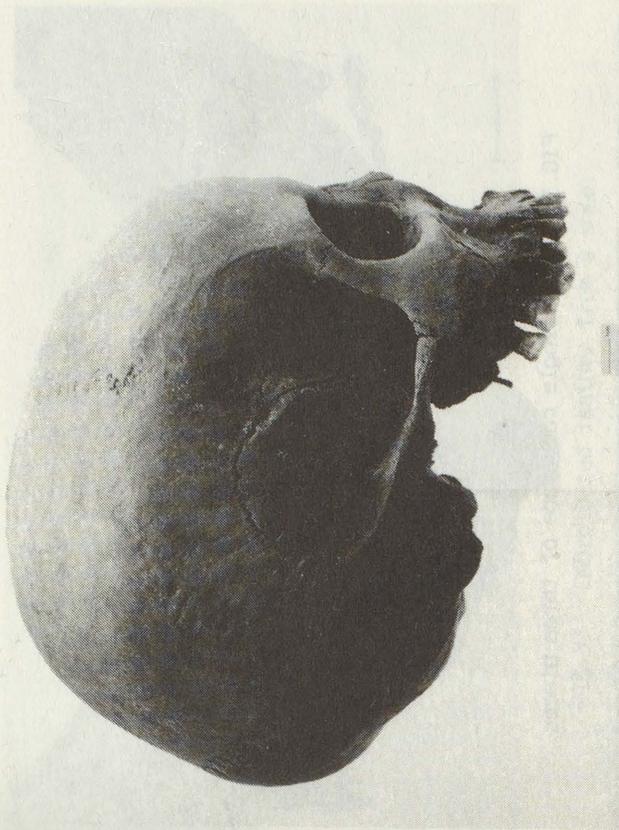


FIG.29 Norma lateralis.

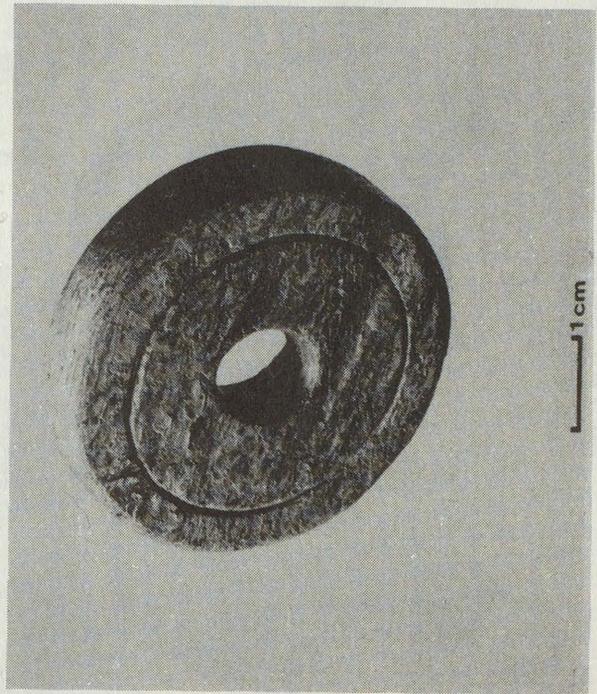


FIG.30 Bone gaming piece.

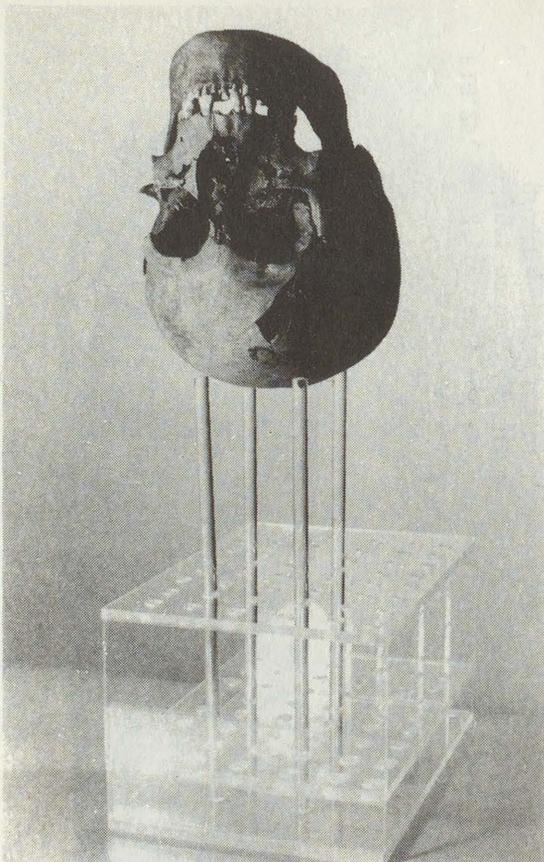


FIG.27 A plexiglass stand to hold skull/object in desired plane using gravity for necessary articulations.

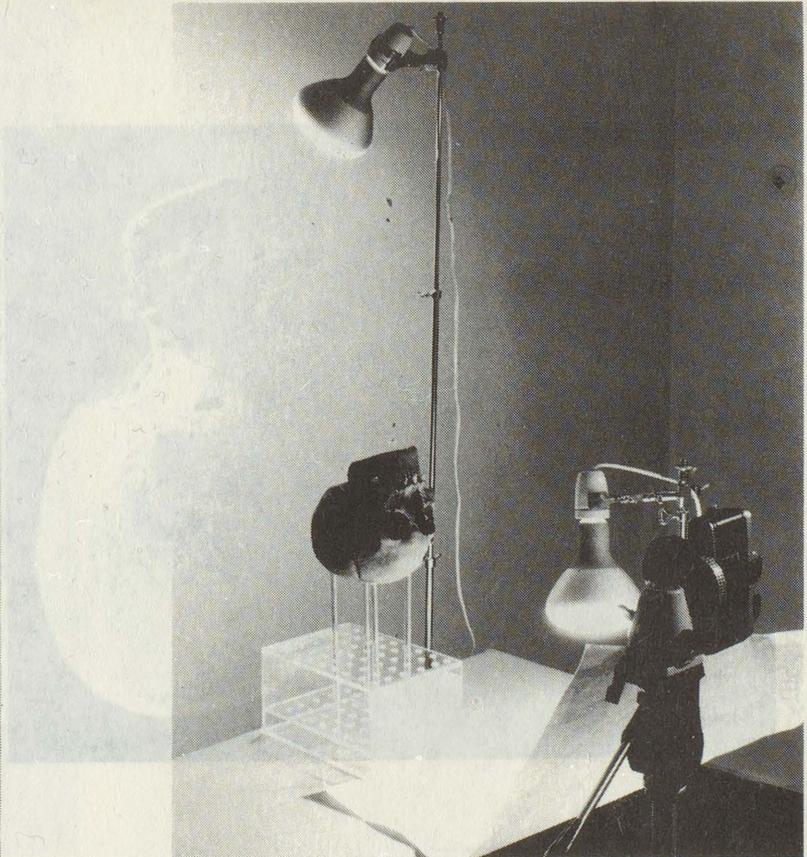


FIG.28 Lighting object so top is right when printed.

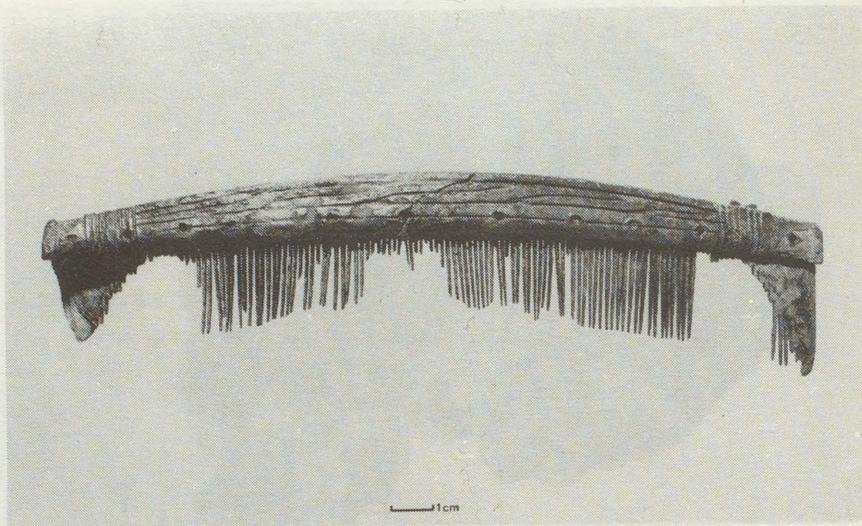


FIG.31 Bone single comb made of three pieces.



FIG.33 Embroidered leather from a shoe.

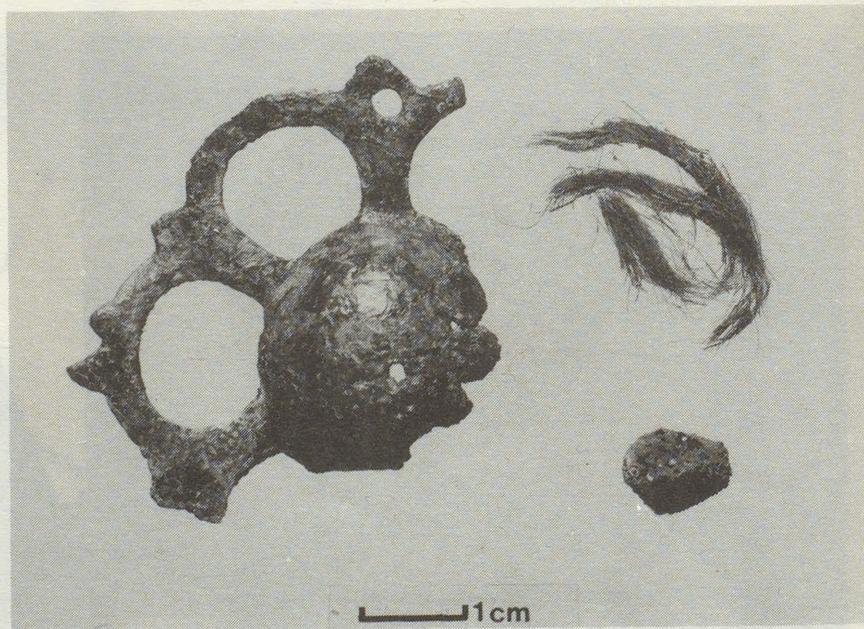


FIG.32 A boss, metal fragment and hair.

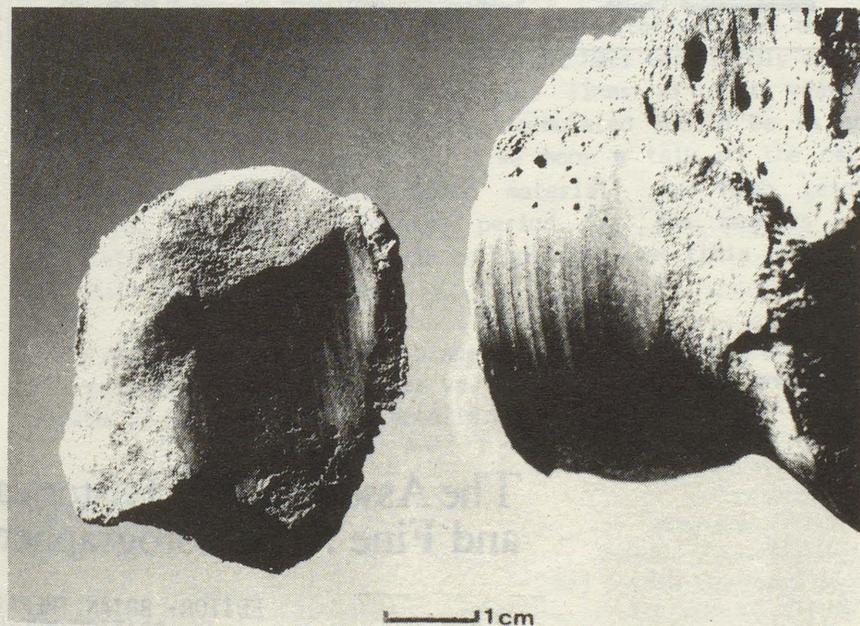


FIG.34 Human bone: distal femur and patella showing eburnation of articular surface and slight osteophyle development on patella. A sign of advanced degenerative joint disease (osteoarthritis).

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THE ANNUAL MEETING OF THE ASSOCIATION

From all the feedback we have received, it seems that everyone who attended the Inaugural Meeting of the Association were well pleased. We are therefore spurred on to further exploits.

Our 1987 meeting has been arranged for Tuesday 27 October, and the Director of the Tate Gallery has agreed to it being held in the new Clore extension of the Tate. Facilities should be excellent with the meeting proper taking place in the new auditorium, and the buffet reception in an adjoining area. Kodak Ltd have very kindly offered to sponsor this year's event along the lines of last year. The programme, although not yet fully formulated should be as equally interesting as last year's, with we hope a talk on the care and restoration of old photographic material, new high resolution emulsions, an open discussion period for the members of the Association, and perhaps a talk on copyright laws (this latter one we are still trying to arrange).

There are of course limits on places, but this shouldn't pose too much of a problem. Please make sure you note on your year planner the date TUESDAY 27 OCTOBER; further details will follow.

MICHAEL DUFFETT
CHAIRMAN

USEFUL PHOTOGRAPHIC BOOKS

1. THE PRESERVATION AND RESTORATION OF PHOTOGRAPHIC MATERIALS
IN ARCHIVES AND LIBRARIES
A 'RAMP' study with guidelines.
General Information Programme and UNISIST, United Nations
Educational, Scientific and Cultural Organisation, Paris 1984.
2. CARING FOR PHOTOGRAPHS
Time-Life International.
3. CONSERVATION OF PHOTOGRAPHS
Eastman Kodak Company.
'One of the most useful booklets on the care, storage and
treatment of photographs and photographic collections'
4. HOW TO SELECT AND USE MEDIUM FORMAT CAMERAS
Theodore Disante, H.P. Books.
5. BASIC PHOTOGRAPHY
M. Lanford, Henry Greenwood and Co. Ltd.
'A practical introduction to theory, equipment and techniques'.
6. ADVANCED PHOTOGRAPHY
M. Langford, Henry Greenwood and Co. Ltd.
'The next step' and intended to complement BASIC PHOTOGRAPHY.
7. HOW TO CONTROL AND USE PHOTOGRAPHIC LIGHTING
David Brooks, Henry Greenwood and Co. Ltd.
'A useful booklet describing various light sources and how to
use metering techniques. Useful diagrams too'.
8. THE PHOTOGRAPHER AND THE LAW
Don Cassell, Henry Greenwood and Co. Ltd.
'An invaluable guide to the problems of copyright, contracts
and photographers' rights'.
9. PHOTO TRADER DIRECTORY NO. 3
Henry Greenwood and Co. Ltd.
'An extremely useful and helpful guide to retailers, agents,
importers and should be used as a complement to the other
similar excellent directory issued free by the 'Professional
Photographer'.
10. APPLIED PHOTOGRAPHY
Arnott, Rolls & Stewart.
Henry Greenwood and Co. Ltd.
'This is intended for the photographer who has already
mastered the basic techniques and wishes or needs to delve
into the more specialized fields such as Micro, Macro,
Infra Red or Ultra Violet to name but a few topics
covered in this admirable work'.

The Association of Historical and Fine Art Photographers

Constitution

1. That the association shall be called "The Association of Historical and Fine Art Photographers".
2. That it shall exist for the furtherance of photography in the field of History, Fine Art, Archaeology, museum and gallery display and related fields.
3. To encourage the interchange of ideas and general support amongst photographers practising in these fields and to promote access to departments thereby increasing wider opportunities for experience.
4. That membership shall be available to those who predominately practise in the above fields of photography.
5. The business of the Association shall be conducted by a committee, comprising a Chairman, Secretary, Treasurer, plus up to seven other committee members with a facility for co-opting other members as required.
6. That this committee be voted to serve for a thirty-six month period for the officers and twenty-four months for committee members. The officers shall be elected at an annual meeting open to all members.
7. That the management committee require a quorum of five members, two of whom shall be office holders to convene a meeting.
8. That the Chairman shall have the power of vote and that he shall have also the power of casting vote.
9. A quorate committee shall have the power to dissolve the association upon notice of one month, with any funds being held, distributed to a charity or organisation named within the same notice to dissolve.