

Antiquity

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Edited by O. G. S. Crawford, F.S.A.

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NOTICES

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Excavation

by COMMANDER NOEL F. WHEELER, R.N. (RETIRED)

Field-Director, Harvard-Boston Expedition, Egypt

OUR only guide to the thoughts and motives of mankind is a correct interpretation of their acts; and when we are dealing with the Past our only guide to their acts lies in a correct interpretation of the results of those acts. These results are visible in their writings, buildings, paintings, and in all the other works of their hands.

Time, with all its attendant destructive agents—war, wear, and wilful destruction—has obscured the evidence considerably; but much still remains, though it may require labour, patience, and careful deduction to secure it.

A man desires a home, builds a house—brick upon brick; he lives in that house, and the presence of implements, utensils, and decorations is evidence of his use of them. The house becomes deserted; the elements throw down its walls, set up decay in the materials, until at last the débris of the years covers it. Then another man, finding a good site, rebuilds there after a different plan; and he shows his differing tastes in the objects he uses and in his methods of using them. The ordinary happenings of life go their round once more within the walls—working, eating, sleeping, birth, death, intrigue, crime, and all the heterogeneous patchwork which goes to make up human existence. An army overthrows the place, fire destroys its share; but, after long ages, an archaeologist comes upon a mound among other mounds, and in the course of his operations he excavates this mound. The final result of his work should be a reconstruction, as complete as possible, of the past history of that house throughout its eventful or uneventful career, and of its occupants. The 'house' may be a cemetery, a fortress, or a tomb—it makes no difference to the main object.

The excavator's work may be clearly divided into six main parts,

(1) The discovery or choice of the site.

He may be influenced in this by knowledge handed down from remote ages, by obvious signs in the present appearance, or by the 'archaeological instinct'; which is really the ability to sum up

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accumulated probabilities and possibilities from a mass of scrappy impressions which would escape the lay observer.

It may be necessary to excavate a site merely on the strength of promising indications, without any absolute knowledge of what is likely to be found there. In this case subsequent events must be made to explain themselves. Where the nature of the site is known, all the attendant questions of supply of labour, living accommodation, attitude of the owners of the land or the authorities, food supply, water, etc., can be considered. The nature of the weather conditions likely to be encountered during the proposed period of excavation is a matter of some importance.

(2) The uncovering of the evidence.

In doing this the utmost care must be taken that no evidence, however trivial it may appear, be destroyed in the process of excavation. This process may take any of the forms intermediate between clearing a few square inches per day with a fine camelhair brush and lifting ten-ton boulders with a winch and tackle.

In the actual process of excavation it is necessary to employ more or less unskilled labour, and continual supervision is therefore essential. The employment of foremen should not take the place of this supervision, and the more direct the dealings of the director with the workmen the better : he is by far the most reliable ' foreman ' obtainable. The foreman, if left to his own devices, is apt to develop into a look-out for the men, to spur them on to greater efforts whenever the director appears on the horizon.

Where two or more levels of different ages are superimposed, and it becomes necessary to remove the upper in order to uncover the lower, the top level should be completely uncovered, photographed, drawn to scale, and levelled before a stone of it is destroyed. It is better that it should remain obscuring some older evidence below than that it should be partly or wholly destroyed unrecorded. A very complete photographic record is necessary, but it must not be allowed to take the place of plans and sections to scale, which should be accurate, clear, and adaptable to reproduction in print.

It is important to see that the area over which the débris is to be dumped has first been cleared and recorded. The money spent in Egypt alone in excavating the dump heaps of earlier excavators would endow more than one archaeological institute. No part of the area to be excavated should be neglected : the object of excavation is not to

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search for one definite thing but to record faithfully everything within the area, whatever it may be and however unimportant it may seem at the time. Instances are numerous where the first excavators have, by incomplete work, missed the main significance of the site ; and the subsequent clearing of a neglected corner has revealed much. The true importance of an object found bears no relation to its size, cash-value, or beauty : the most uninteresting looking scrap may have more to tell than the rest of the season's digging.

In excavation time is always an object ; but, on the other hand, haste is the one thing to be avoided on first arriving on a site, with or without previous knowledge of the place and conditions.

Presuming that the question of living accommodation for the workers has been settled, a thorough inspection of the site is called for. As clear a mental impression of the place as possible should be formed from surface indications before putting pick to work. The general lie of the land will probably be visible in the case of fortresses, town sites, or even cemeteries ; and it is at this stage of affairs that aerial photography, if obtainable, may prove of the greatest assistance.

If a light railway is to be used for the removal of the *débris*, the direction and steepness of the gradient of the ground needs studying, and the most suitable area over which to dump should not be chosen without much forethought. A railway gradient should be steep enough to carry the cars with slight braking from the dig to the dump, and to allow of their being easily pushed back by hand. Sharp turns or sudden changes in gradient must be avoided for trouble-free working.

In any case the following considerations should be taken into account when dumping:—Dump over nothing that may need to be visible in the future ; reduce the travel of the cars to the minimum ; allow for the fact that the line of digging will be continually advancing ; avoid unsightly dumps on sites where appearance of the discoveries is likely to be of aesthetic value ; search the *débris* sufficiently thoroughly to preclude the possibility of any later excavators considering it worth while to search the dumps.

In forts or town sites the line of advance will clearly be along streets, if any, or parallel to lines of buildings ; in buildings, room by room. The walls make the best basis for survey points, owing to their height, mutual visibility, and relative permanence. In cemeteries the line of the work may have to be determined by cutting preliminary trenches to gain more information of the lie of the land than is visible on the surface. In well defined cemeteries an advance on a frontal line

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is best to cover the entire area; but with widely scattered graves, invisible on the surface, this may not be practicable.

At first work will be necessarily slow, and *everything* uncovered should be left undisturbed until the director has inspected it. Later on, when the nature of the work is better known to all taking part in it, things can be speeded up and the diggers will know what to do with each thing uncovered. Records should be kept with the utmost care and completeness at the beginning until the significance of the discoveries is more clear to the workers, when they will get to know just what degree of detail and accuracy is demanded for the different kinds of evidence discovered.

The spirit of that expedition which sets forth in a blaze of self-advertisement and frantic enthusiasm to 'find something'—preferably something sensational—should be suppressed at birth. It is the spirit of the dog searching for a bone—earth, sand and everything flying in all directions in a blind concentration on the bone (which may not be there).

(3) The preservation of the evidence.

The objects or buildings uncovered may require treatment to preserve them before they can be dealt with. Weather, handling, packing, etc., must not be allowed to destroy what the ages have preserved intact hitherto. Expert chemical advice may be needed in this. If the objects can possibly be preserved they should be.

(4) The recording of the evidence.

A system must be used which ensures that the information recorded shall be easily available at short notice, and that it shall be well secured against destruction or confusion through lack of skill in the recorders, through transit, storing, or accident. This system must be simple but infallible—difficult requirements to satisfy in combination.

In recording nothing should be omitted. Every object found should be photographed, drawn to scale, numbered and described with reference to its material, colour, workmanship, place found, by whom and when. If there is any possibility of the object being in its original position of deposit, undisturbed, it should be photographed 'in situ'. It will be found useful to keep approximately the following records:—

- (a) Rough diary of the work day by day, giving descriptions and rough plans of the area cleared daily, objects found, etc.

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- (b) Card index registers of the objects found ; one according to the location, and another according to the nature of the object. Each card should have a scale drawing and full description, date, where found, material, measurements, photo number, registration number (also on object), and notes as to other points of interest. The two indexes to be kept separately to minimize damage by fire, etc.
- (c) Register of photographs taken, giving time, place, direction, etc. All photographs should have a measure included in the picture to give the scale.
- (d) Photographic plates and a set of the prints should be kept in numerical order where they can be easily referred to at all times. To be kept separate from one another (the plates from the prints) to minimize risk.
- (5) The interpretation of the evidence.

Here expert knowledge of the particular period, place, etc., is necessary ; and when this is not obtainable within the expedition itself it must be called in from outside. Theories without adequate evidence to support them are worse than valueless, and the former must rest on the latter rather than the reverse. It is very easy when searching for evidence to support a preconceived theory to get some strange and unstable results. It is wise not to be too precipitate in the formation of theories. By waiting until all the evidence is uncovered one is certain not to have the pet theories of one day overthrown by the excavations of the next. It is wise also to take into consideration everything that has ever been written on the subject in hand. One's 'probabilities' may be cancelled by some fact unearthed previously and inadequately recorded in some obscure publication. Judgments can only be made on the sum total of the evidence, one's own and that of all others who have investigated the subject.

- (6) The publication of the information found.

It is obvious that, so long as the information is retained in the hands and the memory of the excavator, the purpose of archaeology is but half served. Until the full information is in print the excavator cannot sit back with the feeling that a good piece of work is finished.

Ease of reference is one of the most necessary qualifications for a

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publication; clarity of explanation and argument comes next in importance. The full data on which theories or deductions have been made should be given concisely, in order that the reader may form his own conclusions on the evidence—which conclusions are by no means bound to concur with those of the writer. These data should not fill page upon page with meaningless tabulation of numbers and letters, for the interpretation of which a continual reference back and forth in the book is necessary: the book is intended to be *read* and should not require to be fed into a calculating machine.

Plans should be easily readable: enlargement or reduction for printing will alter considerably the legibility of lines and figures, and this should be allowed for in the drawing.

N.B.—The above is merely intended as an outline, of the most general nature, of excavation in the broadest sense. According to the locality and the individual peculiarities of any particular work, so will the details need amplification, modification, or alteration, to suit the conditions. Experience in excavation in Egypt has formed the guide for this article, but the outline will be found applicable to most excavation work.