

How to Observe in Archaeology eBook

How to Observe in Archaeology

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LIST OF ILLUSTRATIONS AND TABLES

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PREFACE

This Handbook is intended primarily for the use of travellers in the Near and Middle East who are interested in antiquities without being already trained archaeologists. It is the outcome of a recommendation made by the Archaeological Joint Committee, a body recently established, on the initiative of the British Academy and at the request of the Foreign Office, to focus the knowledge and experience of British scholars and archaeologists and to place it at the disposal of the Government when advice or information is needed upon matters connected with archaeological science. The Committee is composed of representatives of the principal English societies connected with Archaeology, and it is hoped that it may be recognized as the natural body of reference, both for Government Departments and for the public, on matters connected with archaeological research in foreign lands. It represents no one institution and no one interest. Its purpose is to protect the interests of archaeological science, to secure a sane and enlightened administration of antiquities in the lands which are now being more fully opened to research, and to promote the advance of knowledge in the spheres to which its competence extends.

One means of serving this cause is to provide information for the guidance of travellers in the lands of antiquity. Much knowledge is lost because it comes in the way of those who do not know how to profit by it or to record it. Accordingly, just as the Natural History Museum has issued a series of pamphlets of advice to the collectors of natural history specimens, so it has been thought that a handbook of elementary information

and advice may be found of service by travellers with archaeological tastes; and the Trustees of the British Museum have undertaken the publication of it. The handbook has been prepared by a number of persons, whose competence is beyond dispute; and the thanks of all who find it useful are due to Mr. G. F. Hill (who has acted as general editor as well as part author), Prof. W. M. Flinders Petrie, Mr. D. G. Hogarth, Prof. J. L. Myres, Mr. J. G. C. Anderson, Mr. J. P. Droop, Prof. R. A. S. Macalister, Mr. H. R. Hall, Mr. A. J. B. Wace, Mr. O. M. Dalton, Mr. R. L. Hobson, Mr. E. J. Forsdyke, Mr. A. H. Smith, Mr. R. A. Smith, Mr. A. B. Cook, and Prof. G. A. Cooke. Each contributor has been left considerable latitude as to the method of treatment of the subject allotted to him, and no attempt has been made to bring the various sections into uniformity of pattern. Owing to Prof. Petrie's absence in Egypt, it has not been possible to submit final proofs of his contributions to him.

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Suggestions for improvement in future editions will be welcomed, and will no doubt be forthcoming as the result of experience. Meanwhile it is hoped that this little book will accompany many travellers in foreign lands, and that the labour expended on it will bear fruit in the improved observation and record of archaeological data, in establishing sound principles for the administration of antiquities, and in enforcing proper methods of excavation and conservation. It may also be found of service by those who study the results of research as they appear in museums.

F. G. Kenyon.

PART I

CHAPTER I

INTRODUCTORY

The hints which it is the object of this volume to convey are not meant for experienced archaeologists. They are rather addressed to those who, while anxious to observe and record the antiquities which they may see on their travels, are likely, owing to lack of training, to miss things that may be of importance, or, having observed them, to bring home an imperfect record. It is hoped also that they may catch the attention of some of those who are not interested in the subject, but, coming into possession of antiquities, may unwittingly do incalculable harm by allowing them to be destroyed or dispersed before any record has been made.

Most, if not all, of the countries with which we are concerned, have their Laws of Antiquities. It cannot be too strongly insisted that those laws, even if they might be better than they are, should be obeyed by the traveller. He should familiarize himself with their main provisions, which are summarized in an Appendix. The traveller who makes it his object to loot a country of its antiquities, smuggling objects out of it and disguising the sources from which they are obtained, does a distinct dis-service to archaeological science. Although he may enrich collections, public or private, half or more than half of the scientific value of his acquisitions is destroyed by the fact that their provenance is kept secret or falsely stated. Such action is equivalent to tearing out whole pages from a history and destroying them for ever, for each antiquity, whatever it may be, is in its way a part of history, whether of politics, arts, or civilization. For the same reason anything like unauthorized excavation, especially by unskilled hands, is gravely to be deprecated. To dig an ancient site unskilfully or without keeping a proper record is to obliterate part of a manuscript which no one else will ever be able to read. The tendency of recent legislation is to allow more generous terms in the matter of licences for export to excavators and collectors, and the harsher provisions of some of the existing laws are likely soon to be amended.

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Before leaving home, the traveller will be well advised to make inquiries at the museums or at the head-quarters of the archaeological societies which concern themselves specially with the places which he intends to visit. A list of these museums and societies is appended to this section (p. 26). It is hardly necessary to warn him that archaeological training cannot be acquired in a few days, and that he will have to buy his experience in various ways; but the more time he can devote to working through the collections in this country, the more useful will be his observations abroad. He will be able to learn what kind of antiquities it is especially desirable to look for, not merely with the object of filling gaps in the public collections, but for the advancement of archaeological knowledge in general.

The object of archaeological travel and excavation is not to collect antiquities so that they may be arranged according to the existing catalogues of museums, but to collect fresh information to amplify and correct what we now know, to make our knowledge of the past more complete and useful.

On arrival in the country of his choice, he is recommended to continue at the National Museum the study, which we suppose he has already begun in the museums at home, of the kind of antiquities which he is likely to come across. But he should also take an early opportunity of getting into touch with the local British Archaeological School or other similar institution, where he will receive advice what to look for and where and how to look, and assistance in procuring suitable equipment. Thus the traveller who starts from Athens or Jerusalem should apply at the British School of Archaeology. He may there, if he desires, receive instruction in any of the methods described in Chapter *ii*, in which a little practical demonstration is worth pages of print, and will be given all possible assistance in obtaining such articles of equipment as are available on the spot. (Photographic supplies and all scientific instruments should be brought out from England.) The best maps of the district will also be accessible for examination (but the traveller is recommended to make inquiries in this respect before leaving England); the libraries will provide the literature dealing with the routes he proposes to take; and such a collection as the type-series of pottery and the Finlay collection of prehistoric antiquities at the British School at Athens may be useful to supplement his previous studies at museums, and enable him to observe with intelligence the potsherds, &c., that he may find on an ancient site. In return, he will be expected to report his results either to the School or to some other scientific society or museum at home. It should be unnecessary to remind him that the conditions of the law of the land relating to the reporting of discoveries to the competent authorities should be strictly observed. Such authorities should also be informed of any destruction or removal of monuments which may be noticed.

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Another matter which should not be neglected is the obtaining of such licences as may be required by law for the acquisition in the country or export therefrom of objects of antiquity. Advice on this matter can be obtained at the local School or National Museum.

It is possible that the traveller will begin his journey at a point other than the capital. Inquiries should be made at the London head-quarters of the Schools concerning residents at such places who may be able to give advice to intending travellers.

The traveller will doubtless bring back with him such antiquities as he is permitted to export. A word of general advice on this matter may not be out of place here. The essential value of antiquities, apart from their purely artistic interest, lies in the circumstances in which they are found. The inexperienced traveller is apt to pick up a number of objects haphazard, without accurately noting their find-spots, and even, getting tired of them, as a child of flowers that he has picked, to discard them a mile or two away. If the first act is a blunder, the second is a crime; it is better to leave them lying in place. For the same reason, it is highly desirable that objects found together (e.g. the contents of a tomb) should as far as possible be kept together, or at least that accurate record of the whole group should be made, since the archaeological value of a find may depend on a single object, apparently of small importance. Nothing, for instance, is more common, or more distressing to the numismatist, than the division of a hoard of coins among various persons before they have been examined by an expert. If they must be divided, good impressions should at least be made by one of the methods described in Chapter *ii*, and, if the coins are of gold or silver, the weights should be noted. This should be done even if the coins, to the inexperienced eye, appear to be all alike. The knowledge that any coin from a hoard may be of greater value than a similar coin found singly may induce finders to report such finds before dispersing them. What applies to coins is equally applicable, in various ways, to all classes of antiquities.

It is assumed that the primary object of the traveller is not speculation in the pecuniary value of the antiquities that he may acquire, although he may be not unreasonably inclined to recover some of his expenses by disposing of objects which do not appeal to him. Should that be so, although the authorities of public museums obviously cannot be agents or valuers in such transactions between the owner and private collectors, they are as obviously willing to consider offers which are made to their museums in the first instance and, if the objects are not required by them, to advise the owner in what quarter he may be likely to meet with a purchaser.

CHAPTER II

METHOD

1. Outfit.

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Each traveller will require to provide for his special interests; but for any archaeological work the following things are desirable. Note-books of squared paper. Drawing-blocks of blue-squared paper. Paper for wet squeezes, and for dry squeezes. Brush for wet squeezes (spoke brush). One or two so-metre tapes. A few bamboo gardening canes for markers in planning. Divide one in inches or centimetres for measuring buildings. A steel rod, 3 ft. x 1 inch for probing. Field-glass, or low-power telescope. Prismatic compass with card partly black, to see at night. Large and small celluloid protractors for plotting angles on plans. Plotting-scale, tenths of inches and millimetres. Maps of the district, the best available. Aneroid barometer, if collecting flints; small size; can be tested by observing in a tall lift, or by putting in a tumbler and pressing the hand air-tight over the mouth. The zero error, or absolute values, are not wanted for levelling, only delicacy in small variations. Magnifiers, a few pocket size; will also serve for presents. Indelible pencils, pens, and ink in strong corked pocket bottle. Reservoir pens dry up too much in some climates. China ink for permanent marking. Strips of adhesive paper, about a inch and a inches wide, to put round objects for labelling. Strong steel pliers, wire-cutting. A few pocket-knives will serve for presents. It is best to carry money in a little bag or screw of paper, loose in the jacket pocket, it in a risky district. It can then be dropped on any alarm and picked up afterwards.

Photographic.[1] In the selection of a camera much will depend upon the nature of the work to be undertaken, the conditions of travel, and the climate to which the camera will be exposed. For accurate work a stand camera is always to be preferred to one of the hand variety, and care should be taken to choose an instrument that is strongly made and of simple construction. The essentials of a good stand camera are that it shall be rigid, possess a rising and falling front, a swing back, and bellows which will be capable of extension to fully double the focal length of the lens to be used with it.

[1]Prof. Petrie is not responsible for this section, which is due to the kind assistance of some professional photographers.-*Ed.*

The rising and falling front gives a power of modifying the field of view in a vertical direction. The swing back preserves the verticality of architectural subjects. In some cases, when used with the pivots vertical, it is a help in focussing the subject. The possible extension of the distance between the lens stop and the ground glass to twice the focal length (which is as a rule the distance between the same points, when a distant object is in focus) enables a small subject to be reproduced in natural size.

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For work abroad where extremes of temperature or excessive variations have to be contended with, a special tropical camera is supplied by most of the leading makers. Its well-seasoned hard wood and metal-bound joints render it suitable for hard wear, and reduce the risk of leakage through warping or shrinkage. The tripod stand should be of the so-called threefold variety, with sliding legs which can be adapted to broken ground. If a loose screw is used for attaching the camera to the stand, a spare screw should be kept in reserve. It is important that this stand should be strongly made, and light patterns subject to undue vibrations in the wind should be discarded. For photographing small objects in the studio, a small table is more convenient than a tripod support. If the camera will not sit flat on the table, a bed can easily be designed for it. Better work will be done if this is prepared in advance than if an improvised support is used. As regards the size of the outfit, quarter-plate ($3\frac{1}{4} \times 4\frac{1}{4}$ inches) will usually be found to be large enough for the traveller. For anything in the nature of studio work in a museum or in connexion with an excavation a half-plate camera ($6\frac{1}{2} \times 4\frac{3}{4}$ inches) is more satisfactory. Where a hand camera is preferred it should be one capable of adjustment of focus, and here again, strength and simplicity should be looked for. It should be provided with effective tripod legs, for studied exposures. Plates or flat films are preferable to roll fills [2] which are difficult to manipulate away from home. Flat films are less bulky and less breakable than glass, and can be sent by post. They are supplied by the makers in packs of 12 for daylight loading into a film-pack adapter, which must be provided to take the place of the ordinary dark slides for glass plates. The lens should be a modern anastigmatic by a good maker. A focal length of about six inches will be best for a quarter-plate camera. A bad lens makes success impossible even by accident.

[2] Transcriber's note: 'fills' in the original text is possibly a misprint for 'films'.

The stops will probably be of the Iris pattern, incorporated in the lens and so not likely to be lost, as often happens with loose stops.

A few words on the theory and use of the stops and on the F-notation may be of service. The speed of a photographic lens depends on the ratio of the effective aperture to the focal length. Thus any two lenses used at apertures of F/8, that is at apertures having diameters one-eighth of their respective focal lengths, should be of the same speed, though both lenses and apertures may be very different. In a given lens, the speed varies directly with the area of the aperture admitting the light, that is with the square of the diameter of the aperture. The series of stops usually employed is calculated so that each aperture is half the area of the preceding. Stated in terms of the focal length they are known as F/5.6,

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F/8, F/11.3, F/16, F/22.6, F/32, &c. Since the squares of those numbers, 31.4, 64, 127.7, 256, 510.7, 1024 are approximately each twice the preceding number of the series, the apertures, F(ocal length), divided by the successive numbers as denominators, are each half the area of the preceding and require twice the exposure, F/16 requires twice the 'exposure of F/11.3, and four times that of F/8, and so throughout the scale.

Stops are used to regulate either 'depth of focus' or length of exposure. The 'depth of focus' means the distance before and behind the point in theoretically accurate focus, at which objects are sufficiently focussed, for the purpose the photographer has in view. This length is greatest when only the central portion of the lens is in use. It is greatest with a pinhole, and least with a full aperture. Hence a small stop is required if the picture is to include near and far objects, while a large aperture may be used if all the subject is far enough away to be in clear focus—say more than 25 feet—or if it is a flat surface. The small stop is also required when the rising front or the swing back is in use. The power of regulating the time of exposure is convenient for shortening long exposures in dark interiors, or for lengthening inconveniently short exposures in a bright light.

In practice it will be best to become familiar with the use of about three stops, say the full aperture (perhaps F/5.6 or F/8), F/16, and F/32.

For judging long exposures, the use of an actinometer (issued in many inexpensive forms) is helpful.

A telephoto attachment increases the photographer's power of rendering distant details on a large scale. The results are greatly superior to enlargements of a small plate. It is, however, useless in a wind, unless the camera is specially supported, and is otherwise rather tricky to use. The traveller is strongly advised to master its management at home. It should be adjusted by the maker to the camera for which it is intended.

Unless a photographer's dark room can be had the developing of the bulk is best left until the return home, but tests should be made to see that the exposures are correct. A piece of ruby fabric or ruby paper tied over an electric light will give a safe light after dark, and 'Scalol' or some such one-solution developer which requires merely the addition of water, will give all that is needed for developing. For fixing use 4 oz. hypo to a pint of water.

In warm climates, use cold water. If it is not cool enough, the gelatine of the negatives may give trouble. In that case, get colder water, and use an alum bath. If water is precious, plates can be sufficiently washed by moving them forward in succession, through half-dozen soup plates filled with water.

If habitual use is not made of tabloid developers, &c., it is advisable to have some in reserve, for use in the case of broken bottles and spilt solutions.

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Useful notes and maxims.

An over-exposed plate gives no dark shadows in the print.

An under-exposed plate gives no high lights. When in doubt, choose the risk of over-exposure.

To test the safety of your camera—Half draw the shutter, and expose part of the plate in the camera, in the sunshine, without uncapping the lens, and develop.

To test the safety of your red light—Expose a plate, divide it into two, develop half in the dark, and half for the same time, with the same solution by the light you are testing, and compare the results. This test is worth making, as photographers are apt to give themselves much discomfort from exaggerated caution.

2. Itinerary.

Where there are efficient maps the only need is to mark in the position of any antiquities, by cross-bearings to clear points, with the compass, drawn in with a sharp pencil. Where the maps are too small, or deficient, a continuous register of time should be made, noting the minute of starting and of stopping; this over known distances will serve to give the value over the unknown. Note whether mounted or walking, and the compass bearing of the track; also the bearings of known points around, whenever stopping. Without any known bearings pacing and compass used carefully may go over the roughest ground without five per cent. error in the day.

It is better when on unknown ground to plot a map as you go, so that no misunderstanding of notes can arise after. If a squared block cannot be used, at least draw the bearings and distances roughly, writing in the amounts. This should be plotted up accurately in the evening. A photograph may be unintelligible later in its detail. It is best where known features, a temple, tombs, &c., are in a view, to sketch the outline when photographing, and write in the details, so as to give a key to the photograph. Inquire about antiquities whenever stopping. When camping, villagers usually come up to see who it is; then tell them the directions of the places around. They will ask how you know; show them the map, and they are puzzled; talk over all the names a few miles round, and then anything notable in the district may be remarked, and inquiries made. Several men together help each other to remember, and bring out more remarks. Sometimes an intelligent man will describe all the antiquities he knows in the district: this should be followed closely on the map, and difficulties resolved at once, so as to get a clear record noted.

Of course, enormous exaggerations are met with, and not one report in ten will prove to be anything. Tracking up the source of bought antiquities is one of the best methods, and the one by which Naukratis was found.

If travelling by camel, it is practicable to diverge widely on foot, if objects are looked for well ahead. A foot track diverging 4.5 degrees, and then converging likewise, will easily keep in touch with a baggage camel. Fix on the camping-place in the morning, and let every one know of it, so that if accidentally parted all can rejoin by night.

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3. Recording.

Buildings or ruins. Fix position by bearings to mapped points; also note bearings of any prominent feature near by, which may serve for finding the position again. Sketch a plan, always north up in the book, note bearing of main wall, and then measure with bamboo rod all original dimensions, with some diagonals to fix angles; do not forget the thickness of the walls. It is best for a long length to stretch a tape, pegged down by the ring, and pulled tight by hand: read off all positions of doors, windows, cross-walls, &c., on one long length, and not as separate short lengths. If possible plot the measures on squared paper as you go, and then any errors or omissions will be checked at once. 'E. and O.E.' has no place in a plan.

Town mounds. Estimate height over bare land outside; eye height is a trifle over five feet. At the foot of the mound see where the horizon cuts the shoulder of it to find eye height; walk up to that point, and sight another five feet; so on, till you see over the top. If there is any section, by a stream side, or digging, or land-slip, look for strata, stone or brick walls and floor levels, and for any distinctive potsherds; observing levels as before. Look all over the top for potsherds, to find the latest period of the town. Look around the mound for any early potsherds. Sherds on the slopes are worth less; as they have probably slipped down. Red burnt brick in Egypt is all Roman or Arab; in Greece and Asia Minor, red brick and mortar is Roman, Byzantine, or later.

Walk to the middle of the site or mound, and see its extent. Then walk round the wall line, or circuit of it, pacing and compass noting, to sketch the shape and size of the site: especially look for any straight lines of wall showing. Sometimes a mud-brick wall may be entirely denuded away, yet the position is shown by the sharp edge of the strew of potsherds on the surface.

Look for any slag-heaps; these are the remains of lime burning, and show where stone buildings existed; sometimes foundations still remain. Look for any recent pits or trenches; these show where stone or burnt brick has been dug out in modern times, and may give the position and plan of a temple or church.

See if any rubbish mounds can be traced outside of the town site; usually marked by a gentle walk-up slope, and a steep thrown-down slope, and mainly consisting of pottery, e.g. Monte Testaccio at Rome, and mounds east of Cairo.

Town sites rise in Egypt about forty inches a century, by the dust, rubbish, and decay of mud-brick buildings. In Palestine the rise is five feet a century, owing to the rains.

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Cemeteries. These have generally been more or less plundered; if recently, the pits show; if anciently, there are scraps of pottery lying about. If there are pebbles or marl thrown up from deep levels, there is evidence of tombs, and they may be unplundered. Blown sand or grass may hide all trace of tombs. Sometimes the whole masonry of a tomb may have been removed, and the gravel filling-in have spread so uniformly that there is no sign of building, although a course or two of stone may yet remain under the surface. The surface of ground should be closely looked over at sunrise or sunset to show up the slight hollows or ridges by the shadows. After rain differences will often appear in the drying of the ground. Ask any one near a site if he knows of any one getting stones, or bronze, or plunder from tombs. Anything found will probably be greatly exaggerated, and no clear idea of the time of finding can be reached; yet any such detail may be useful.

Any large town site must have a cemetery, which is near it in most cases. In Egypt the towns being in the inundated land, the cemeteries are at some miles distant on the desert. The prehistoric cemeteries may be anywhere; the historic cemeteries are usually round the ends of the dyke roads, which were thrown up in the early dynasties as irrigation dams, and still serve as the roads of the country. In Greek lands cemeteries are always outside a town, usually by the side of the roads.

Caves should always be carefully explored; the roof and sides searched for inscriptions or carvings; rock pockets in the sides examined; and the floor dug over for potsherds and any small objects. If there are different strata these should be each removed separately, and the depth and positions of objects noted.

4. Methods of Planning.

Though we cannot here give full technical details of all the methods for plans and surveys, it will be useful to state the scope of each method, so that they may be kept in mind, and whichever is best suited to the individual and his work may be provided for.

1. Plain pacing. After pacing lengths of a few hundred feet, up and down hill and flat, tape the distances, and learn true value of pace. Careful pacing can be done to one or two per cent. of the whole; and properly used, in triangles, may give a useful plan.
2. Pacing and compass. This covers large spaces quickly, but the compass is less accurate than the pace.
3. Tape. Lines of taping must be well planned, with triangle ties to secure the angles. Pulling up straight is difficult in a wind, especially on broken ground, and one per cent. error is quite possible then. When working alone peg the tape down by the ring, or round a stone.

4. Tapes and cross lines. Stretch two strings crossing squarely on the ground: fix the square by laying a squared drawing block below and looking at strings over it. Two helpers each hold a tape, zero on a string, and the two tapes are held together by the observer and read off, giving the distance to each string; this is to be plotted at once on squared paper, and the plan is completed in detail as it progresses, without any notebook or later plotting. The helpers must be capable of holding the tape square to the string. Good for sites up to two hundred or three hundred feet.

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5. Plane table. Excellent for some ground, where objects are visible from a distance: otherwise it requires a marker put up at every point to be fixed. Cumbersome to carry, much slower than 4.

6. Box sextant, used as giving angular accuracy to any of the foregoing; most useful with taping, and in following.

7. Sextant and three points. The most rapid accurate method is to adopt three points visible all over the ground (as trees or chimneys) or set up three markers. Find shape and size of this triangle. Then at any point take two angles visible between the points, and this fixes position of observer. A large site may have forty points fixed in two hours thus to about 1 in 1000. For detail and plotting see Petrie, *Methods and Aims in Archaeology*.

8. Theodolite. For the most accurate work a theodolite is used, giving points to about 1 in 5000. It is almost essential for any astronomical meridian or latitude.

None of these methods necessitate any helper, except 4 which needs two helpers. The observation is from the point to be fixed in 1, 2, 3, 4, and 7; but it is to the point, needing signals or visible features on the points, in 5, 6, and 8, and for those methods a large stock of rods must be taken, and the whole ground gone over, before the work of observation; such methods take far more time than the others. The able surveyor will know by instinct how to use all the inferior methods as supplements to the higher, whenever time demands and accuracy allows.

When first searching a site, note the direction of any wall to the horizon point, and so see if other walls are parallel.

In all cases a plumb line is wanted for alining foundations and scattered blocks. Always carry six feet of thin string, and pick up the nearest suitable stone for a weight, up to three or four pounds in a wind.

5. Drawing and Copying.

Inscriptions. If there is any chance of being interrupted by any claimant, or by crowds, always make a hand copy at once, as quickly as possible. After a squeeze or photograph is taken, yet the hand copy is often of value to explain positions of squeeze slips or detail of photographs.

If there is no chance of interruption, then a carefully drawn copy full size should be made. For this a dry squeeze is the ground work. Lay a sheet of thin paper, such as thin wrapping or plain paper, on the stone, and press all the letters over with the fingers, so as to make a sharp bend; a break in the deep hollows does not matter. Then, putting the paper on a drawing-board or sheet of millboard, cock it up so that the shadow of the

squeeze is seen, and draw over the lines (starting at right base), referring to the stone whenever uncertain. This is the only right way to copy hieroglyphics by hand. Note that the edges are usually rather worn, and the drawn lines should be inside the squeeze lines. If the stone is large, several lesser sheets are best.

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Where there is writing, or the relief is too faint to squeeze, put the paper immediately below the first line, and draw it sign for sign, so that the spacing is preserved and no omission is possible. Fold back the paper as each line is copied, and so always keep the copying close below the line of inscription.

If the signs are in an alphabet that is not familiar, refer to the table of alphabets.

Sculpture Sculpture in low relief can be copied best by dry squeeze. As the connexion of the sheets used should be exact, put up the first sheet truly vertical, and mark little pencil crosses at the corners on the stone. Then the corners of successive sheets should be fitted into the angles of the crosses. When inking in the pencil drawings, do not carry the lines within two inches of the edges of the sheets. Then place sheets edge to edge, adjust them to fit as best they may, weight them heavily with books, turn back one edge and weight it, and then slip a strip of wetted adhesive paper half-way under the edge that is down; at once liberate the edge that is up, and dab (not rub) both heavily down on the adhesive. This makes a joint free of cockling, and when dry the inking can be completed across the joint. Where there is any colour remaining on sculpture or inscription, only dry squeezing is permissible.

Where signs are worn or decayed it is needful to try various lighting. This can be done in the open air, by shading the part by the hands placed around it as a sort of tube, the head blocking out the light over the tube. Then quickly raise a hand alternately, so as to reverse the oblique lighting, and watch the effect on the sign.

If the stone has not too tender a face, careful washing often brings out an inscription; and in such cases it is usually far easier to copy from a wet than from a dry stone.

If reliefs have been much weathered they can be made plain for photographing by laying horizontal and covering with sand; on wiping away the sand from the relief the ground will be left flat sand, so hiding the confused hollows of weathering.

The safest way for drawings to travel is to post them at the nearest post direct to where they will be worked up. The Postal Union takes rolls of 21 cm. thick, 60 cm. long, up to 5 kilos as parcels, or rolls of 10 cm. thick, 75 cm. long, up to 2 kilos by book post open at ends. This is far better than carrying rolls by hand.

Wet squeezing. Where there is no colour, and the stone is strong and not crumbling, a wet squeeze is the best copy. There are three purposes for it, and the method differs for each; (1) thin single sheet kept fresh on the outer face for photographing later; or (2) single sheet well beaten in and patched, depending on pricking the outlines and hand-copy from it, or blacking over the relief on the inner side and photographing; or (3) double sheet hard beaten, and patched in the hollows, for plaster casting afterwards.

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For (1) there is no need to get an impression of the hollows to the bottom, and the face of the paper should be smooth. A soft paper, with little or no size, and a soft clothes-brush will do well for this. The sheet should cover the whole inscription, or have as few joints as may be. The stone should be dabbed with a wet brush so as to saturate the face, the sheet of paper well soaked in water laid upon it, taking care not to leave bubbles, and then dabbing firmly with the brush will drive the paper into the hollows. If the stone is polished or very smooth, it is needful to peel off the paper while wet by holding two corners, and lay it reversed on a flat surface to dry; if left on the stone the contraction will destroy the impress. Out of doors the paper can be held down by pebbles around it, or by sand on the edges, to prevent the wind catching it.

(2) The stronger squeeze should be of a tough paper with moderate sizing. Cut the paper to the form of the stone. Thrust it into a pail of water, knead it about vigorously, roll it into a ball and pummel it, so as to break the grain and let the water well into it. Then wet the stone, shake out the paper like a wet handkerchief, full of creases, lay it on the stone and begin to beat it in with a hard, long spoke-brush. A few strokes round the edge will catch it down so that the wind does not disturb it. Then begin to beat it heavily along the top edge; beat it to a pulp, and patch with strips left soaking in the water wherever breaks occur. If the stone is porous the paper may part from it, especially if expanded by beating; the only course then is to slush more water on the face so that it will go through the breaks and hold the paper down again. It may be needful to slit the paper to let the water go below it. Beat down again, enough to fix it.

(3) For casting purposes a final backing sheet, moderately beaten on, is needed to hold the squeeze together and stiffen it. Either (2) or (3) can be left on the face of the stone till quite dry, and then carefully detached by lifting up from one corner, and slipping a dinner-knife or a slip of wood under the paper to lift any part that sticks.

Stiff squeezes as (3) must be packed flat; thin, as (1) and sometimes (2), may be rolled in a large curve, but this always deteriorates a squeeze.

For plaster casting, a squeeze should be heated on a stove and brushed over with melted paraffin, or better wax, sufficient to cover the face without choking the finer detail. Before each cast the face should be lightly oiled with a tuft of wool.

Small objects. These can be copied by a thin paper squeeze, and the squeeze may be mounted by pasting a card and lightly pressing the squeeze back down on it. This will take out all cockling and make it lie flat for photographing.

Tin-foil is very handy for squeezes, and may be saved from chocolate for this. Press it firmly on a coin or seal with a tuft of wool, or beat it with a soft tooth-brush, being careful to avoid creases. The foil should then be floated on water, hollow back up, and blazing sealing-wax dropped into it to back it. The resulting positive can be then stuck on card.

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For plaster casts of coins the face should be dusted with French chalk, as also a smooth bed of plasticine; the coin can then be pressed in safely without any possible risk, and afterward plaster cast in the mould. Sealing-wax is said to be sharper, but there is a risk of its sticking to the coin. If it is used, breathe hard on the coin, or wet it, before impressing; and when first set lift it slightly to detach it, and then replace till cold. Or tin-foil may be used, as in making positives; but, instead of floating on water, press plasticine on the foil while it is still on the object.

For curved surfaces, as cylinders, any of these methods can be used; the plasticine is the more successful.

In all casting of plaster on a small scale, use a soft camel-hair brush. Mix the plaster in the palm of the hand with a knife, take up some of the wettest to brush over the face of the moulds (a dozen scarabs or small coins done at once); then put the brush in water, and take up thicker plaster with a pocket-knife to drop on as a backing. This avoids air bubbles without using too weak a plaster.

Copying hieroglyphic inscriptions. Where possible a wet or a dry squeeze should be taken of any inscription. When hand copying is necessary, the main matter is to get the cartouches of king's names accurately, and the date at the beginning, examining specially whether single strokes, I I I I, have been connected above, n n, forming the ten sign. The main difficulty for any one not knowing the 800 signs is to distinguish between those that are alike, especially when damaged. For this purpose the commonest signs that may be confused are here placed together, so that the essential points of difference may be noticed. A small cross is placed here by small points of distinction which might escape notice.

[Illustration I: *Some hieroglyphic signs liable to be confused with each other*]

6. Photography.

The camera and material have been described under outfit.

Lighting and preparation of objects is a main element of success. When first looking over any ruins, make a list of every view wanted, with the time of day when the sun will be right for it. Then follow the time-table, and so get the best lighting all in one day.

For movable stones or figures place them in half-shade, as a doorway, and then tilt every way until the best lighting is found, fix them in that position, and then set up the camera square with them.

The camera should usually be fixed to look downward vertically, and then variation up to 40 degrees can be got by the legs. Hold the camera in the right position, keeping the

legs off the ground, and then drop the legs to find their own place; thus very skew positions can be fixed quickly.

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Small objects are best laid on black velvet, and taken vertically. Scraps of charcoal are useful to prop them in exact positions. A sheet of white paper stuck on a leg of the stand may be useful to prevent shadows being too heavy. Where outline, and not flat detail, is wanted, then a light ground is best; the most perfect is a sheet of ground glass with white paper a foot or two below it. If the ground glass cannot be had, a good substitute-also useful for a camera glass-is plain glass with a sheet of tissue paper (or the packing paper of films) stuck on with paraffin wax.

The dressing of objects to show up clearly is often needful. Incised objects can be filled in with charcoal powder if light, or chalk if dark; in any case a coarse powder, so as not to stain the object. For faint cutting on glass or crystal go over the lines with 'China ink in a pen, so as to cover them. Harden the ink in the sun, and then gently wipe with a damp finger until all the excess is removed and only the roughness of the lines remains black. On large objects light dust or sand is often useful, to make relief clearer.

For objects in a bad light, or in the interior of tombs, reflected light must be used. Lids of biscuit tins serve well; a lid in the sun sixty feet off, and another lid reflecting the light on to a wall, will suffice for a two minutes' exposure of a slow plate. Three or four successive reflections into a totally dark chamber will suffice in five or six minutes.

When an important subject cannot be revisited it is well to take duplicates; the camera should be shifted laterally a few inches for a near object, or a few feet for a distant view, and then the two films will form a stereograph, if both succeed.

In arranging groups of small objects, put together what will go in a three-inch circle, and minor pieces around, and then the best in the middle can be printed direct on lantern slides.

7. Preservation and Packing.

While travelling little can be done for preserving objects. Papyrus rolls should be wrapped at once in a damp handkerchief, to be carried, and then wrapped in paper, packed in a tin box, and filled round with cotton wool. Small papyri can be safely damped in a wet cloth, and flattened out between the leaves of a book; secure one edge straight in the hinge, and gradually press flat and secure by advancing leaves over it. Glass, if perfect, should be packed in tins with wool; old food or tobacco tins do well for tender things.

Flint implements and coins, though hardy, should be saved from grinding by wrapping in waste paper.

Ivory, if it has been buried, is very liable to flake. The cure is to soak it in paraffin wax; but temporarily it is secured by winding cotton thread round it in many directions. Some

anoint it with vaseline, but if vaseline penetrates the ivory, it will not take up paraffin or gelatine later. Tender wood may be likewise saved.

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A much-cracked glazed jar was packed by winding string round it in all directions, with tufts of wool under the string.

A whole mummy in most fragile condition, so that it could not be lifted, was made up solid with 40 lb. of paraffin wax which was melted out of it afterwards in England, making hardly any change. If contracted burials should be preserved, dust carefully, splash on about 5 lb. of paraffin wax heated to smoking-point. When cold, detach from soil, turn over, paraffin the lower side, and build up weak parts with a sludge of melted paraffin and sand, nearly chilled. About 8 to 10 lb. of wax will do the whole. The skull should be packed separately. Pad all hollows of the body with soft rag to spread pressure in packing. Paraffin wax is the best preservative as it is tough, and may be used as a coat over an object for safety. When not needed it can be cut away, or melted away, and cleaned off completely with benzol. It should be melted in an iron saucepan, as solder will give way if it is superheated. As it melts at about 120 degrees F., and boils at about 600 degrees F., it can be greatly superheated, and used when smoking, so as to penetrate deeply into wood or porous material. It is perfect for strengthening skulls; most rotten examples slopped with paraffin, and finally soured for a few seconds so as entirely to cover the bone in and out, will travel safely, if not crushed.

Boxes must always have corner posts, inside or out; see that the sides are nailed up to the edges to the posts, or the lid or bottom may part by the side splitting. See that all nails—except for the lid—are driven slanting alternately one way and reversed, this prevents sides or bottom drawing off. Nail the lid with many short nails, so that it can be raised without splitting.

To secure heavy objects in a mixed box, an inverted rough stool is the best, the cross piece on the object below, and the sides coming up to the lid. If cross bars are nailed in a box, damage may be done to an object in forcing the bars loose. It is often best to put heavy and light things in the same box, to equalize weights in journeying; if well secured, a mixed boxful travels well. Be very careful that a wedge-shaped stone cannot force itself loose by repeated jolts, or it may split a box.

Slabs of stone are best packed in open shallow boxes face down on straw or wool, secured by a few diagonal cross bars on the top, as then they do not need to be opened for customs. All stones of regular form should be supported at a fifth of the length from each end. No bedding on a box is worth anything, as the box will bend more than the stone, and the strain will all come on the middle. Very heavy blocks are best with sacking on the face, and roped round in various parts.

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Pottery is most difficult to pack safely. For large jars, mark the points of contact on the box, and nail on cushions of old cloth stuffed hard with straw, so as to pad the jar on all sides; make sure that it cannot twist about into a diagonal position off the pads. Long boxes, five or six feet, with three or four cross divisions, are best. Begin packing, say four pots with straw, at one end of the box, press up a cross board tight on them, and nail through the sides: then another batch likewise; about one inch thick of hard-pressed straw is needful at each contact. Twist straw into rough bands, and wind it round each pot. Fill up corners to prevent the bands shifting loose. Empty small tins make good stuffing for blank spaces. Old newspapers torn to bits and rolled into balls make good packing for pots and hold them firmly, but this method is dangerous if the packing becomes wetted. Pots should always be packed tight. Old sacking or cotton stuff may be tied on over the mouth of large pots, to prevent straw slipping in, and loosening the packing.

Bronzes and coins should not be cleaned in any way, till in a settled work place.

8. Forgeries and. Buying.

Most travellers wish to buy some things of interest, and in remote districts they may do good service in rescuing important objects which may be wanted in museums. Forgeries are ubiquitous, even in most obscure places in the hands of peasants, either supplied by dealers, or casually obtained, often in good faith. It is best to inquire of local collectors and museums as to the kinds of forgeries met with. The following notes are to show the novice how far he may go safely.

Bronze figures with a thick red patina, which scales off readily sometimes, or with thick green patina cracked, or hard green or brown patina, are safe. Thin green patina, or bare brown or black metal is dubious.

Papyri in roll, flexible though fragile, in known Greek or Egyptian writing, are fairly safe. Lumps stuck together, brown and scrappy, are made up.

Coins cannot be safely bought unless patinated, copper or silver. Only an expert can judge of gold or 'clean silver.

Jewellery of small size, as earrings and bracelets, is generally safe, if the age of the design is known. Modern wire is always drawn, ancient is irregular. Look for concretions of lime in the hollows, and for the dull face of old gold. If once cleaned there is little to distinguish old from modern gold.

Stone vases if turned are Roman or modern. The ancient irregularities should be studied from specimens.

Scarabs with nacreous or decomposed glaze in the hollows (as in the deep cuts at the side) are safe; also, if there are natural cracks by age, which would prevent modern cutting. There is a large variety of skilful forgeries.

Stone statuettes: a skilled forger may be paid up to 100 pounds for a figure to order. Only an expert can judge.

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Never buy in the dusk or in dark rooms. When buying never have any one at hand who calls attention to things, nor let any attendant interfere. Seem entirely unconcerned.

Get the reputation of never advancing on offers, or bargaining; let taking or leaving things at once be the rule. Time and delays are money to the traveller, and it is worth much to save time in haggling. Your donkey-boy will soon spread your character.

When offering for single things to a peasant, put the money by the side of the antiquity, and say that he must take one or the other: fingering the cash is irresistible, and no time is lost.

If it is likely that the source of an object will not be truly stated, the way is to make the best guess you can, and say it dogmatically: the pleasure of setting you right will often bring out the truth, or if you guessed right it will gain you credit and break down reserve.

As a principle it is well to be looked on as a liberal buyer, so as to encourage the offer of antiquities. A little more thus spent will be a trifling extra on the whole journey, and may largely increase the results in objects and information for future work.

Though prices can only be learned by practice, and they vary in time and place, yet the following scale may be taken as fairly safe.

Bronze figures if good work, inches high squared = shillings: except in bad state, or Osiris, or bad clumsy work, or votive animals.

Papyri or parchment, continuous text, 1 pound a square foot, accounts, half or a third.

Jewellery, between weight in coin and double that, according to work.

Scarabs, common but fair 2s., names 2s.-5s.; up to 5 pounds or 10 pounds if beautiful. Engraved gems, small common Roman, 2s.-4s. in London, more in East; for a fair Greek 1 pound-10 pounds.

Coins often higher in the East than in London. In Greek lands copper coins may be bought by weight, and picked over at leisure, and the worthless coins rejected. For single coins fix a price, say half a franc, and offers of large numbers may come in, from which the best can be chosen and the rest refused.

Glass vases, blown, inches high squared at 4d. or 6d. each. Coloured glass double or triple.

Ushabtis, poor 1s.-4s., fair 5s.-10s., fine blue or engraved 1 pound-10 pounds.

LIST OF THE CHIEF BRITISH INSTITUTIONS AND SOCIETIES CONCERNED WITH THE ARCHAEOLOGY OF THE NEAR AND MIDDLE EAST.

London.

British museum, Bloomsbury, W.C.1.

Director, Sir F. G. Kenyon, K.C.B., P.B.A.

Keeper of Egyptian and Assyrian Antiquities, Sir Ernest Wallis Budge, Litt.D.

Keeper of British and Mediaeval Antiquities (including Prehistoric Antiquities, Ethnology, and Oriental Antiquities) Sir Hercules Read, F.B.A., P.S.A.

Keeper of Greek and Roman Antiquities, A. H. Smith M.A.

Keeper of Coins, G. F. Hill, F.B.A.

Keeper of MSS., J. P. Gilson, M.A.

Keeper of Oriental MSS. and Printed Books. L. D. Barnett, Litt.D.

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Victoria and Albert museum, S. Kensington, S.W.7.
Director, Sir Cecil Harcourt Smith, C.V.O.
Assistant Keeper of Architecture and Sculpture, E. R. D. Maclagan.
Assistant Keeper of Ceramics, C. H. Wylde.
Keeper of Metalwork, W. W. Watts.
Keeper of Textiles, A. F. Kendrick.
Keeper of Woodwork, E. F. Strange, C.B.E.

British Academy, Burlington House, Piccadilly, W.1.
Secretary, Sir I. Gollancz, Litt.D.

British school at Athens, 19 Bloomsbury Square, W.C.1,
Secretary, John Penoyre, C.B.E.

British school in Jerusalem, c/o. Palestine Exploration Fund, 2 Hinde St., Manchester Square, W. 1. Secretary, Miss R. Woodley.

British school at Rome, 19 Bloomsbury Square, W.C.1.
Secretary of the Faculty of Archaeology, History and Letters,
E. J. Forsdyke.

Palestine exploration fund, 2 Hinde St., Manchester Square, W.1
Secretary, E. W. G. Masterman, M.D.

Egypt exploration society, 13 Tavistock Square, W.C.1.
Secretary, Miss Jonas.

Egyptian research account and British school of archaeology in Egypt.
Hon. Director, Prof. W. M. F. Petrie, F.R.S., F.B.A., University
College, Gower St., W.C.1.

Society of Antiquaries of London, Burlington House, W.1.
Secretary, C. R. Peers, F.S.A.

Royal Asiatic society, 74 Grosvenor St., W. 1.
Secretary, Miss Eleanor Hull.

Society for the promotion of Hellenic studies, 19 Bloomsbury Square,
W.C.1. Secretary and Librarian, John Penoyre, C.B.E.

Royal Institute of British architects, 9 Conduit St., W.1.
Secretary, Ian MacAlister.

Society for the promotion of Roman studies, 19 Bloomsbury Square,
W.C.1. Secretary, Miss Margaret Ramsay.



Royal anthropological Institute, 50 Gt. Russell St., W.C.1.
Secretaries, H. S. Harrison, T. A. Joyce, O.B.E.

Royal numismatic society, 22 Russell Square, W.C.1.
Secretaries, J. Allan, Lt. Col. W. Morrieson.

Royal geographical society, Lowther Lodge, Kensington Gore, S. W. 7.
Secretary, A. R. Hinks, F.R.S.

Archaeological joint committee. Hon. Secretary, G. F. Hill, British
Museum, W.C.1.

CAMBRIDGE.

Museum of archaeology and ethnology. Curator, Baron A. von Hugel.

Fitzwilliam museum. Director, S. C. Cockerell, M.A.

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OXFORD.

Ashmolean museum. Keeper, D. G. Hogarth, C.M.G., F.B.A.

ATHENS.

British school. Director, A. J. B. Wace.

JERUSALEM.

British school. Director, Prof. J. Garstang.

ROME.

British school, Valle Giulia. Director, Thomas Ashby, D.Litt.

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C.V.O.

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PART II

INTRODUCTORY NOTE

The aim of the special sections contained in Chapters III-VIII is to describe, not the objects usually to be seen in Museums, but only such things as will be found lying out on mounds and sites, and as are more or less distinctive of a period. Thus certain comparatively trivial objects are named, because they are peculiar to a period, and likely to be found in a casual passage over a site, whereas other objects, common to several periods, are ignored. Only the distinctive, key objects are mentioned. The great features of Greek Art, for instance, are not dealt with in Chapter *ii*; nor are coins, the probabilities of finding them being too slender, and the possibilities too wide. Nevertheless, coins when found should be carefully quoted. Pottery naturally takes the largest place, as it was abundant, and its fragments are a good guide to period, and being practically indestructible and of no intrinsic value are most likely to be met with. The difference between pottery made with the use of the wheel and that made without is important to be noted. The use of the wheel can usually be detected through the slight inequalities of the clay that make a series of parallel lines on the inner surface. The diagrammatic representations of the pot-forms characteristic of various periods or of other objects ranging through a civilization the main features of which can be shown in outline will, it is hoped, be found useful. Simplified tables of alphabets, intended to make it possible roughly to identify the script, if not the date, of an inscription, are also given.

CHAPTER I

FLINT IMPLEMENTS

See Diagrams, [Illustrations *ii*: Flint Implements]

As the development of Flint Implements follows more or less the same course in all the districts with which this volume deals, a general description is given here, to avoid repetition in the special sections.

The earlier periods of man are so remote that geological changes, wet, and decay, have removed nearly all his works except the flint tools. It is to these chiefly that we must look for our knowledge of his abilities. Flints are nearly all that we have for the early stages, to supply what arts, history, and literature give in later stages. To preserve and educe all we possibly can obtain from their situation, and purpose, is a main duty to history. To destroy or confuse the evidence, by removing specimens without a record, or by shifting them to a different place, is a crime in science. As there is no temptation to ignorant peasants to move flints until they are induced by collectors, so the whole fault of the wreckage that has taken place in many sites lies on the plundering collector.

No money or reward should be given for any flints; a few fine specimens may be lost, but vastly more harm would be done by encouraging mere raiding.



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The periods and styles that are now recognized are shown on the diagram—and their conditions were:

Style Climate Sea level

Eolithic (Pliocene) ?
Rostrocarinate (Crag) ?
Strepyan warmer lower
Chellean warm low
Acheulian cooler rising
Mousterian cold high
Aurignacian less cold lower
Solutrean warmer low
Magdalenian colder rising
Neolithic as present

Differences of heat may be 20 degrees or 30 degrees + or —

Differences of level may be 600-800 ft. + or —

The information required of all observers is the level and conditions of all flint tools that they may see or collect.

Gravels containing tools may be surface gravels on a plateau; note then the level, and the relation of them to any cliffs; do they end abruptly at a cliff edge, showing that the valley was filled up; or do they fade away to the edge, showing that they are older than the valley erosion? Gravels may be the filling up of a valley which was previously eroded; note the highest level at which they can be traced; often little pockets of deposit, or traces of sandy strata, can be found clinging high up on cliffs; also note the depths in the gravel at which any tools are found. Any shells or bones in the gravels are of the greatest value; the depth at which they are found should be written on them at once, with the locality.

Surface flints should have levels noted on them. If sharp they show that probably submergence has not reached that level since; if worn, then water has been up to a higher level, from which they have been washed down.

Levelling may be read from a contour map, if there is such available. In most countries it must be done by reading feet on an aneroid barometer, set with zero of level scale to 30 ins. or 760 mm. Then visit as soon as possible some point where a level is marked on the map, as a hill top, and read the barometer. This will give the correction to be made to all the previous notes. If there is no level recorded, get down to a stream bed (the larger the better) and read it there, recording the exact place on the map. The level may then be worked out approximately by points above and below on the stream, for accurate reading, hold the aneroid face up, gently tap it, and read; then face down

similarly, and take the mean. Guard that the wind does not blow against any keyhole in the case.

Pencil all levels and localities on flints as soon as found. Ink in the notes on the least prominent parts of the flint, in small capital letters, when in camp, with waterproof China ink.

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Styles of flint work. The Eoliths are worn pebbles, chipped as if for scraping. The Rostro-carinate flints found at the base of the Crag are long bars with a beak-end, suited for breaking up earth. The human origin of both of these classes is contested. Flints of Strepy type are nodular and partly trimmed into cutting edges, the smooth surface being left as a handle. The Chelles types are remarkable for regularity and fine bold flaking; the worn butt (though best for handling) was eventually flaked away to obtain an artistic uniform finish. The St. Acheul series has finer flaking, the crust being completely removed: there is a tendency to ovate or almond shapes, and the edges are often curved, the reverse S-curve being preferred. They diminish in size towards the end of the period. The Chelles and St. Acheul series are core implements, made by detaching flakes; and the succeeding (Le Moustier) method is to use the flakes, generally for scraping. The *Ia*, *Em* the diagram is transitional from St. Acheul to Le Moustier. The form marked M is the predecessor of the Solutrean form next below it. The Aurignacian is a smaller flake industry, with many lumps more or less conical, and often with careful parallel flaking or fluting. The Solutre culture brought in a new style, particularly thin blades with delicate surface flaking which seems to have reappeared in the late Neolithic. The pointed borers, certain arrow-heads and minutely chipped rods of flint are characteristic of the period, and flints of this age are found on the Egyptian and Syrian deserts. Longer blades, sometimes very coarse, with ends worn by scraping, mark the period of La Madeleine. They are found in prehistoric Egyptian graves, along with Neolithic knives and lances. As a technical advance on flaking by blows or pressure, grinding and incidental polishing of flint implements are regarded as characteristic of the Neolithic period; and the practice may have started in areas devoid of flint, where it was necessary to utilize local material that could not be flaked like flint. In Europe generally, polished celts belong to the Megalithic or latest division of the Neolithic, but this implement appeared much earlier, and in a sense succeeded the Palaeolithic hand-axe. The latter is not known to have been hafted, and its working edges were at the pointed end; whereas in Neolithic times the implement had become an axe in the modern sense, with the pointed end inserted in a haft, and the cutting edge removed to the broader end. There are many other Neolithic types, used with or without a haft, and only a small proportion were finished by grinding on sandstone.

CHAPTER II

GREECE

[See the diagrams of flint implements, [Illustration *ii*] of pottery, [Illustration III]; and of alphabets, [Illustration IV]]

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The Periods into which the subject must be divided are roughly as follows:

- I. Prehistoric down to about 1000 B.C.
- II. Prehistoric Greek down to about 700 B.C.
- III. Archaic Greek 700-500 B.C.
- IV. Classical Greek 500-300 B.C.
- V. Hellenistic after 300.
- VI. Roman.
- VII. Byzantine.

I. PREHISTORIC

A. NORTH GREECE.

Neolithic.—Neolithic settlements on low mounds (*maghoules*) rising from the plains.

Stone implements. Axes, hammers, chisels, querns, &c. Flint chips, bone needles, obsidian.

Pottery. Hand-made burnished, yellow, brown, black or red. Handles rare. Holes in rim, or lugs pierced for suspension, Earliest remains show painted sherds. Long period of unpainted ware followed. Patterns irregular, rectangular and curved. No naturalism. (Figs. 1 and 2.)

Ware differs slightly with locality. In Thessaly fine red ware undecorated contemporary with red decoration on white. Chocolate paint on deep buff follows. Incised ware, geometric patterns white rubbed in.

Figurines.

Rude clay. Steatopygous.

This civilization extended from northern edge of Thessaly as far south as Chaeronea. Use of bronze before end uncertain. Civilization undisturbed by Aegean culture that spread over southern Greece until just before both were swept away by iron-using people.

B. CRETE, AEGEAN, SOUTH GREECE.

Crete.

Neolithic.

Black or red burnished pottery.

Bronze age.



Early Minoan.

Painted pottery, dark paint on light ground, geometric designs.

Unpainted, surface mottled red and black.

Middle Minoan. circa. 3000 B.C.—White designs geometric on dark ground. Orange and crimson added. Pottery very thin and fine (Kamarea ware). Patterns very various but not naturalistic except in rare instances. (Figs. 3 and 4; hatched lines=red.)

Late Minoan. circa. 1500 B.C.—Return to use of light ground. Brown lustrous paint, fine surface to clay. Decoration naturalistic, flowers, cuttle-fish, shells, spirals, ripple patterns, white and orange dots and bands occasionally super-imposed on dark glaze (Figs. 7, 10, and 12).

White and orange disappear. Decoration stiffer and more conventional.

AEGEAN.

Neolithic. Nothing known.

Bronze age.

Contemporary with Early Minoan.

Pottery with geometric patterns normally dark on light buff or reddish coarse clay. Sometimes red or white on black burnished clay.

Marble figurines 'fiddle-shaped' from Naxos and Paros (III, Fig. 6).

Contemporary with Middle Minoan.

Pottery with very pale sometimes greenish clay, and grey black totally unglazed paint. Patterns mainly geometric. Rather sparse decoration. Later, with addition of red, decoration becomes fully naturalistic. Lilies and birds in red and black (Melos) (III, Figs. 5 and 9; hatched lines=red). Beaked jugs (III, Fig. 5) most characteristic shape of this period.

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Cretan influence strong in Middle Minoan completely drowned local efforts in first Late Minoan days. Thenceforward local ware imitative.

South Greece.

Neolithic. Nothing known.

Bronze age.

Geometric Ware with matt paint and pale clay corresponding to that of islands found in Argolid and Boeotia.

'Urfirnis' Ware. Hand-made. Whole vase covered with thin semi-lustrous wash varying from red-brown to black. Sometimes mere smears. Mainly found in Boeotia, but extends north to valley of Spercheius and south to Argolid. Date uncertain, but in Boeotia evidence that it ended before rise of 'Minyan' ware.

'Minyan Ware.' Grey unpainted pottery, polished. No decoration except (rarely) incised lines. Usually wheel-made. Characteristic shapes: Goblet with tall ringed stem (III, Fig. 15); wide open cup with high handles.

Appears to range Between Middle Minoan *ii* and Late Minoan III.

Most frequent in Boeotia to which it owes its name. Found as far north as Thessaly and as far south as Crete. Local imitations, obvious but distinct, found with imported specimens (Melos). Provenance unknown; connexion with Troy suspected.

'Mycenaean.' The Cretan civilization swept over South Greece in the first Late Minoan period. Characterized by exuberance both in shape and ornament (III, Figs. 11, 12, 13, 16, 17). Bulk of what is likely to be found is of latest period when style has become conventionalized. Compare Fig. 11 (Mycenaean) with III, Fig. 7 Late Minoan I. Characteristic shapes high goblet and 'stirrup' vase (III, Figs. 17 and 16).

Female clay figurines common (III, Fig. 14), also animals, oxen.

Objects Characteristic of Aegean Civilization.

Seal Stones. Round or bean-shaped, pierced for suspension, usually soft stone, e.g. slate or steatite. Sometimes hard, as hematite or rock crystal. Carved with naturalistic designs: lions, (III, Fig. 8), stags, bulls, cows or hinds suckling their young, cuttle-fish, dolphins, &c. Two animals ranged like heraldic supporters characteristic.

Obsidian. Natural glass, volcanic, black. Source Melos. Used for knives throughout Bronze Age.

Chips of Knife or razor blades, and sometimes the cores from which these were flaked, may be picked up on any Bronze Age site, and even on Thessalian neolithic settlements. Glistening black unmistakable.

Terra-cotta lamps. The characteristic lamp of the Aegean civilization is open, as opposed to the Greek and Roman lamp where the body is partly covered in.

Walls. Cyclopean walls of huge irregular stones. Also good square-cut masonry.

'Corbelling' system for arches, each layer of stones projecting inwards over the one below. Also used for the vaults of 'Beehive' Tombs towards end of period.

[Illustration III: *Types of Greek pottery, etc.*]

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II. PREHISTORIC GREEK

Geometric or Dipylon Period.

Pottery. Iron Age. circ. 1000 B.C.—Absolute break in continuity from what preceded. No naturalism. Prevalence of geometric patterns (III, Figs. 18 and 19). Not much variety. Meanders, lozenges, and zigzags. Circles joined by tangents replace Mycenaean spirals. Ornament crowded. Rows or single specimens of long-legged water birds. Human figures rare, rude angular silhouettes.

Local characteristics discernible (e.g. between ware of Thessaly, Attica, Boeotia, Delphi, Argolid, Laconia, Thera, and Crete), but strong family resemblance. (Lower specimen III, Fig. 19 characteristic of Boeotia.) Dark paint on natural clay (sometimes lightened by a white slip, e. g. Laconia) differs distinctly from Mycenaean. Shapes fewer and curves less flowing. Amphorae, plates, bowls, and jugs. Trefoil lip to jug first appears.

Terra-cotta loom weights from now onwards often pyramidal in form and glazed.

Bronzes.

Figurines. Three types:—

Human, rare (as on vases).

Quadrupeds, mainly horses. Cylindrical muzzle and narrow cylindrical belly (III, Fig. 23).

Birds. Long neck and legs, flat bill and body. Stands to above, flat, square or round, with open-work snake or spiral.

Pins (to fasten dress at shoulder). Long head with small bosses like strung beads sometimes separated by discs (III, Fig 21). Sometimes larger flat disc at end of head (often missing) Pin itself usually iron, rarely extant.

Brooches.

1. Spiral type. Of wire coiled into spirals. Made of one, two, or three wires crossing with two, four, or six spirals respectively. Boss at centre. Spectacle type (two spirals) common. In 'spectacle' type (sometimes very large) spiral purely utilitarian, giving spring to the pin. With four or more spirals the additions are ornament, noteworthy in view of absence of spirals on pottery.

2. Bow type.

(a) High arched bow solid.

(b) Arched bow hollowed like boat inverted. This type often has flat plate attached to one end, lower edge of which is bent to form catch. Plate incised, crossed leaves, ships, horses, or men.



(c) Arched bow consisting of crescent-shaped plate, similar incised decoration.

Paste Beads.

A type pyramidal, dark with yellow spirals round corners, much resembling 'bull's eye' sweets, was common in Laconia (III, Fig.27).

Terra-cotta Figurines. Series of rude horses sometimes with riders characteristic of end of period. Chiefly from Boeotia. Painted like pottery, but chiefly in lines.

III. ARCHAIC GREEK

A. Orientalising.

Pottery. 700 B.C.—Influence from Asia Minor. Recrudescence there of spirit of Mycenaean art? Lions, stags, sphinxes, sirens, either in procession or arranged in pairs like heraldic supporters.

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Stylized plant motifs in decoration. Rays (or flower petals) rising from foot most characteristic (III, Figs. 24, 26, and 28).

Use of purple paint to supplement black both for details of figures and for band decoration.

Geometric ornament (though perhaps with a difference) survives to fill blank spaces on backgrounds of scenes.

Varieties of style. Beasts drawn in silhouette, heads outlined, eyes, &c., drawn in, early, and mainly in the islands (III, Fig. 29). Later whole figures in silhouette with details incised, particularly identified with Corinthian and Boeotian and Laconian styles (III, Fig. 26). Styles most likely to be found on the mainland are 'Proto-Corinthian' and 'Corinthian'.

'Proto-Corinthian' (also called Argive Linear). Small vases, very fine pale clay. Decoration chiefly horizontal lines very fine. Rays from feet. Sometimes silhouette animals round shoulder.

Characteristic shapes: pear-shaped aryballoi, and lekythi with conical body, long neck, and trefoil lip (III, Figs. 24 and 25).

'Corinthian'. Clay pale buff to warm biscuit colour. Rays round foot. Purple bands. Rows of usual animals. Incisions. Details in purple. Ground ornaments, incised rosettes more or less carefully drawn. These in great profusion leaving very little bare space. (III, Fig. 26; hatched lines=purple.) Throughout this period desire for a light ground was felt, and where the natural colour of the clay did not give sufficient contrast it was covered with a strip of cream-or white clay (e.g. Rhodian, Naucratic, Laconian; see III, Fig. 28, Early Laconian Vase).

Terra-cotta Figurines. Series that culminates with Tanagra figures of fourth century begins. May be said always to be a step in advance of contemporary sculpture if any.

Statuettes rare at this date, but relief heads on flat plaques or on vase handles common. Treatment of hair usually resembles Restoration wig (III, Fig. 20). Rosette frequent on shoulders represents head of bronze (rarely silver or gold) shoulder pin.

Bronzes. Pins (to fasten dress at shoulder). Three large bosses increasing in size as they near head replace many small equal bosses of preceding period. Disc heavier (III, Fig. 22).

Brooches. Spiral type has disappeared. Couchant lion type with snake tail has been found at Olympia and Sparta. In general brooches cease to be common.

Plaques (doubtless affixed to wood). Relief patterns of guilloches or rows of bosses. Figure scenes similar to those on pottery. Characteristic of seventh century. Chance of picking up slight.

Inscriptions. Earliest extant examples of use of Greek script on stone may date from this period. For developments, see tables of alphabets, Illustration IV.

[Illustration IV: *Greek alphabets*]

B. Black Figured Period.

600 B.C.—Predominance of Attic pottery. Decay of local styles. Introduction of red colouring into clay and of superlative Attic black glaze.

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Figure scenes (battle scenes and scenes from mythology) largely predominate. Black silhouettes, details marked with fine incisions, additions of purple and white (latter for linen and flesh of women). Elaborate palmettos characteristic (III, Fig. 31).

IV. CLASSICAL GREEK

Red Figured Period. 525 B.C. Same clay and glaze, but whole vase covered with glaze and figures reserved showing in colour of clay, details being added with fine-drawn lines of glaze.

White Attic Vases. The older style of figures drawn in outline on a light ground (e. g. Naucratic and Rhodian ware), the space within outlines being filled more or less with wash of colour, survived in Athens side by side with the more usual black glazed ware, and in the fifth century was particularly affected for the class of funerary lekythi, vases made for offering at a tomb (III, Fig. 30). Outlines at first drawn in black, then golden brown, lastly a dull red.

Miscellaneous. Walls. Sixth century. Characteristic type of polygonal wall, each irregular stone very carefully fitted to its neighbours.

Fortifications usually built with square towers and bastions projecting from the curtain.

Round watch towers here and there to be met with.

Bricks. Baked bricks rarely used till Roman days. Bricks stamped by King Nabis (early second century) have been found at Sparta.

Terra-cotta roof tiles (sometimes with stamped inscriptions) largely used.

Laconian Pottery Characteristics. Fragments of black glazed Attic ware are the class of remains easiest to pick up on any Greek inhabited site, except perhaps in Laconia, where perhaps for political reasons the local style was never ousted and pursued its natural process of decay until Hellenistic times. Use of white slip over pink clay complete at end of seventh century, then partial; abandoned by beginning of fifth century. Characteristic patterns, squares, and dots (III, Fig. 28) seventh century; lotus and pomegranates sixth century and fifth century.

500 B.C.—After the end of the fifth century, manufacture of vases at Athens decayed. Supply chiefly from South Italy. Growing use of additional white (rare in Attic red figure vases), sometimes addition of detail in yellowish brown, and a general coarseness of execution, mark the change.

Terra-cotta figurines (figures of everyday life, mostly female; head-quarters Tanagra in Boeotia) prevalent.



V. HELLENISTIC

300 B.C. Side by side with decay of red-figure style appear two classes of vase that became very prevalent. (1) White designs, often floral, on totally black ground of inferior dull glaze. (2) Black ware decorated not by paint but by moulded figures and patterns. Also the handles of unpainted jars with stamped impressions (buff clay) not uncommon. Provenance mainly Rhodes.

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VI. ROMAN

Hellenistic ware (2) is forerunner of Samian or Aretine red pottery with moulded designs. Very widespread in Greece in Imperial days.

VII. BYZANTINE AGE

Remains as far as the scope of this section is concerned are few. Fragments of pottery may be found at Sparta. These bear strong resemblance to the contemporary wares found in Egypt belonging to the early Mohammedan period.

Transparent lustrous glaze. Ground usually pale yellow or cream, sometimes pale green. Designs childish in character. Lions, birds, human figures painted in brown under the glaze or incised through.

CHAPTER III

ASIA MINOR

[See the diagrams of pottery, Illustration V: *Asia minor pottery*]

1. Introductory.

Travellers are more likely to make new discoveries elsewhere than on the actual sites of ancient towns and villages. In many cases the site is found to be entirely bare of all remains except sometimes small fragments of pottery. In general, inscribed and other stones have been carried away to serve as building material for mosques, houses, fountains, bridges, &c., or as headstones for graves in cemeteries or for other utilitarian purposes. It is, therefore, in and near modern villages and towns that inscriptions are chiefly to be found, as well as smaller antiquities, such as clay tablets, pots or fragments of them, terra-cotta figures, coins, and so forth. The smaller articles may sometimes be found in the bazaars, but they are usually in the hands of individuals.

It should not be assumed that inscriptions which are exposed to public view have all been copied; moreover, new stones are constantly being turned up, especially where building is going on and where there are old sites or cemeteries close at hand. Great numbers of inscribed stones are hidden away in private dwellings, where they are difficult of discovery and of access. Travellers should take advantage of opportunities that may offer of examining antiquities in private houses, and of visiting sites or monuments about which information may be received, particularly if they are a little off the beaten track. Reward will often come in the shape of valuable discoveries, of which

many remain to be made. Cilicia in particular has been imperfectly explored, and interesting monuments and inscriptions, particularly Hittite, may be found there.

2. Pottery Fabrics.

It is not yet possible to describe fully or accurately the succession of styles, or even to assign all known fabrics to their proper periods. For this reason, even the most fragmentary specimens are of interest, provided only that:

- (1) the outer surface is fairly well preserved,
- (2) the place of discovery is known.

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All fragments showing a rim or spout, handles or part of a base, should be preserved until they can be compared with a more perfect specimen.

The following fabrics, however, are widely distributed, and usually seem to have flourished in the order in which they are here described:

A. Hand-made wares, rough within, but smooth or burnished surface, self-coloured (drab or brown), or intentionally coloured black (by charred matter in the clay, or by a smoky fire), or red (by a clear fire, sometimes aided by a wash or 'slip' of more ferruginous clay). Sometimes a black ware is 'overfired' to an ashy grey.

In such wares ornament is rare, and consists mainly of (a) incised dots, dashes, or lines, in simple rectilinear patterns (chevrons, zigzags, lozenges), often enhanced by a white chalky filling (V, Figs 5- 8); (b) ridges or bosses modelled in the clay surface, or adhering to it. The forms are plump and globular, often round-bottomed or standing on short feet. Rims are absent or ill-developed; necks actually prolonged into trough-spouts or long beaks; handles are very simple and short. Vases are sometimes modelled like animals, or have human faces or breasts (V, Figs. 1-4).

These wares begin in the Stone Age, and seem to predominate in the early and middle Bronze Age. Locally they may have lasted even later, but the use of the potter's wheel spread rapidly in the early Bronze Age.

B. Hand-made wares of light-coloured clay, with painted decoration, usually in black or reddish-brown. The paint is generally without glaze, but sometimes is decayed and easily washes off.

The forms and ornaments resemble those of class A, but are less rude and more varied. Distinct rims and standing-bases appear, and spouts give place to a pinched lip.

C. Hand-made wares of black or other dark clay, with painted decoration in white or ochre. These fabrics are rather rare, and the paint is easily washed off. The forms follow those of class B.

Classes B and C seem to begin early in the Bronze Age, and are gradually replaced by the corresponding wheel-made fabrics of class D.

D. Wheel-made pottery begins in the Bronze Age, and is distinguished by its symmetrical forms, and by the texture of the inner surface, especially about the rim and base, where the potter's fingers have grazed the whirling clay. Self-coloured wares still occur, and are sometimes elegant ('bucchero' ware); but the improved furnaces now permit general use of light-coloured clays, suited to painted decoration. Glazed paint is still rare, and may be taken as probable token of date not earlier than the end of the Bronze Age. The glaze-painted wares of the Greek island-world occasionally wandered



to the mainland a little earlier than this, but not far from the coast. On wheel-made pottery the ornament is either (a) applied while the pot is on the wheel, and consequently limited to lines and bands following the plane of rotation, or (b) added afterwards, free-hand, usually between such bands, and especially on the neck and shoulder.

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Simple rectilinear schemes are commonest (panels, lozenges, and triangles, enriched with lattice and chequers) (V, Figs. 9, 10, 11, 12); with these in the Early Iron Age appear little targets of concentric circles drawn mechanically with compasses (V, Figs. 13-15); also, by degrees, birds (V, Fig. 16), animals, and simple plant designs (rosettes, lotus, palmette), and occasionally human figures. But as a rule, the mainland pottery is very simply decorated, and insular imports are rare, except within the area within Greek colonization.

In the Later Iron Age or Historic Period, from the seventh century onward, the pot-fabrics of Asia Minor rapidly assimilate two main classes of foreign fashions, Greek and Oriental.

E. The Oriental types (mainly from Syria) are all plump and heavy looking, usually in coarse buff or cream-coloured ware, almost without paint. The Greek forms are more graceful, varied, and specialized; light-coloured clays predominate, with simple bands of black ill-glazed paint, absorbed by the inferior clays.

After Alexander's time the Greek and the Oriental forms became confused; the general level of style and execution falls, painted decoration almost disappears, and the outer surface is often ribbed by uneven pressure of the fingers on the whirling clay. This fashion is a sign of late Hellenistic or Graeco-Roman date.

F. Meanwhile, the black-glazed Greek (mainly Athenian) wares spread widely for table use, and were imitated locally from the fourth century onwards. The clay is pale or reddish (genuine Greek fabrics are usually quite red within) and the glaze thick, black, and of a brilliant glassy smoothness. Imitations are of all degrees of inferiority.

G. Other late fabrics have smooth ill-glazed surfaces, of various red, brown, or chocolate tints, over hard-baked dull-fractured paste not unlike modern earthenware, but usually dark-coloured. These wares begin in the Hellenistic period, and go on into the Roman and early Byzantine Ages. They have sometimes a little ornament in a hard white or cream 'slip' which stands up above the surface of the vase. These fabrics are all for table use, or for tomb-furniture, and are usually of small size.

H. Pottery with vitreous glaze like modern earthenware only appears on Byzantine and Turkish sites. There are a few late Greek and Roman fabrics of glazed ware, mostly of dark brown and olive-green tints; but they are rare, and usually found in tombs. The earlier glazes are applied directly to the clay; later a white or coloured slip is applied first, and a clear siliceous glaze over this.

3. Inscriptions and Monuments.

A. Hittite Civilization. (See figures, Illustration VI: Hittite Inscriptions, etc.)

(1) From 2000 B.C. onwards baked clay tablets with cuneiform (or wedge-shaped) writing (Illustration VI, Fig. 1) to be found anywhere in Eastern Asia Minor, within the Halys bend and south of it, in Southern Cappadocia, in Cilicia, and in North Syria up to the Euphrates.

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(2) 1000-700 B.C. probably: inscriptions generally cut on stone, dark and hard (black basalt), or on the living rock, in hieroglyphic writing. The hieroglyphs are either cut in relief (VI, Fig. 4) or incised (VI, Fig. 2). Found in the same region and sporadically west of the Halys.

(3) From 1400 B.C. and 900 B.C. onwards monuments and sculpture. Human figures are short and thick, generally wearing boots with toes turned up (VI, Fig. 3.) Found in the same regions as the inscriptions and also west of the Halys to the sea.

B. Lydian inscriptions.

From about 500 B.C. Letters mostly like Greek capitals (sometimes reversed); (Illustration IV, at bottom).

C. Lycian inscriptions and monuments.

From about 500 B.C. inscriptions, sometimes with a Greek translation. (IV, at bottom.)

Monuments, mostly with inscriptions, are generally tombs in stone, built to imitate wood, with the ends of beams projecting or showing.

D. Greek antiquities.

(1) Early period to 323 B.C. the great Greek colonies on the seaboard and in the coast valleys really formed an outlying part of Greece, and for them the section on Greece should be consulted.

(2) Periods of Seleucid and Pergamene rule, 323-130 B.C. Inscriptions of these periods to be found mostly in the coastal region, rarely on the plateau. Chiefly royal ordinances, thank offerings, municipal honorary inscriptions, decrees, covenants, and the like.

(3) Graeco-Roman period, 130 B.C.-A.D. 400. Language of inscriptions remains normally Greek, though the lettering gradually assumes a different character from century to century, steadily deteriorating. The Phrygian language, written in Greek letters, survives for several centuries in epitaphs, part of the inscription often being in Greek.

Latin inscriptions are not common except in Roman colonies during the earlier centuries of their existence. Elsewhere they are chiefly official documents of various kinds (e.g. imperial ordinances, milestones usually of columnar shape with the Emperor's titles, boundary stones, &c.), or expressions of homage to Emperors, honorary inscriptions to governors and other officials, dedications, epitaphs, &c. Sometimes a Greek version is added.

Latin inscriptions of the Republican period (recording decrees of the Senate) are extremely rare.

[*Illustration VI: Hittite inscriptions, etc.*]

CHAPTER IV

CYPRUS

[The traveller will find the *Catalogue of the Cyprus Museum*, by J. L. Myres and M. Ohnefalsch-Richter (Oxford, 1899) indispensable for the study of Cypriote Antiquities. Reference may also be made to Myres, *Catalogue of the Cesnola Collection of Antiquities from Cyprus* (New York, 1914). They contain numerous illustrations of types, and make diagrams for the present section unnecessary.]

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The principal classes of ancient remains are as follows:

Settlements. These are usually much devastated by the removal of building materials to more recent habitations; or are obscured by modern towns and villages on the same site. All foundations in squared masonry, or composed of unusually large stones, should be noted and protected as far as possible. The frequent presence of large building stones, and especially of architectural fragments, in recent house-walls probably indicates the neighbourhood of an ancient building: and all reconstructions and fresh foundation-trenches should be kept under observation. The present Antiquity Law provides for the inspection and custody of ancient remains so exposed: the Curator of Ancient Monuments is charged with the supervision of all buildings and monuments above ground; the Keeper of Antiquities for the custody of movable objects, and for the registration of those already in private possession. Taking into consideration the utility of good building material to the present owners of such sites, active co-operation to preserve ancient masonry is not to be expected, unless local patriotism and expectation of traffic from tourists can be enlisted in support of Government regulations. Architectural fragments found in reconstruction are often best preserved by arranging that they shall be built conspicuously into one of the new walls, well above ground-level, or transferred to the nearest church or school-house.

Sanctuaries usually consist of a walled enclosure containing numerous pedestals and bases of votive statues and other monuments. Usually only the foundation-walls are of stone, as the same sun-dried brick was commonly used in ancient as in modern times for the superstructure. Such sites are often very shallow, and when they occur in the open country are liable to be disturbed by ploughing, when the smaller statuettes and terra-cotta figures may be turned up in considerable numbers. As most of our knowledge of the sculpture, as well as of the religious observances, of ancient Cyprus is derived from such sites, all such indications should be reported at once to the Keeper of Antiquities, and arrangements made for the site to be examined with a view to excavation before it is cultivated further. The sculpture on these sites begins usually in the seventh century B.C.; before that period terra-cotta figures were in use as far back as the ninth or tenth century. Figures of 'Mixed Oriental' style, resembling Assyrian or Egyptian work, give place about 500 B.C. to a provincial Greek style, which passes gradually into Hellenistic and Graeco-Roman. The material is almost invariably the soft local limestone, and the workmanship is often clumsy; but even the coarser examples should be treated carefully, as they were sometimes completed in colours which are easily destroyed by too vigorous washing. The first cleaning should be with gently running water only.

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Tombs are of all periods, and are found not only around historical sites and actual ruins, but also in localities where the settlement to which they belonged has wholly disappeared. Though simple graves were always in use among the poorest folk, the commonest form of tomb at all periods is a rock-cut chamber entered by a door in one side, to which access is given by a shaft or sloping passage (*dromos*) cut likewise in the rock. The earliest are but a few feet from the surface, just deep enough to ensure a firm roof to the chamber; later the depth is as much as 12 or 15 feet. Occasionally the chamber, and even the passage, is built of masonry and roofed with stone slabs or a corbel vault, and the simple door-slab gives place to a stone door, hinged, or sliding in a grooved frame. Cremation was occasionally practised in the Hellenistic Age, but the regular custom was to bury the body; during the Bronze Age in a sitting or a contracted posture, in all later periods lying at full length. Stone coffins (*sarcophagi*), with a lid, were used occasionally by the rich from the sixth century onwards, and wooden coffins in the Graeco-Roman period. There is always as rich a tomb-equipment as the mourners could afford, of personal ornaments, wreaths, provisions, weapons, and other gear, especially pottery; and terra-cotta figures of men, animals, furniture, and other objects for the use of the deceased. In Graeco-Roman tombs pottery is supplemented or replaced by glass vessels, and coins are frequent, and are important evidence of date. Most of our knowledge of Cypriote arts and industries comes from this tomb-equipment, which should therefore if possible be preserved entire and kept together, tomb by tomb; not neglecting the skeletons themselves, which are of value to indicate changes in the island population. The position of tombs was often marked by gravestones above ground; these remain scattered in the surface soil, or collected to block the entrances to later tombs. They are frequently inscribed. A very common form in Greco-Roman times is the *cippus*, a short column, like an altar.

Pottery and other objects
from tombs, and also from settlements, is classified as follows:

Stone Age: not clearly represented in Cyprus; but some of the earliest tombs (with rude varieties of red hand-made ware) contain no metallic objects, and may belong to the latest neolithic period. Stone implements are very rare, and should be carefully recorded, with a note of the spot where they were found.

Bronze Age, early period (before 2000 B.C.): polished red ware, hand-made, sometimes with incised ornament filled with white powder.

Bronze Age, middle period (2000-1500 B.C.): polished red ware, and also white hand-made ware with painted linear ornament in dull black or brown.

Bronze Age, late period (1500-1200 B.C.): degenerate polished red and painted white ware; wheel-made white ware with painted ornament in glazed black or brown, of the 'Late Minoan' or 'Mycenaean' style introduced from the Aegean; various hand-made wares of foreign styles, probably from Syria or Asia Minor.

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In these periods, weapons, implements, and ornaments are of copper (with bronze in the 'late' period); gold occurs rarely; terra-cotta figures are few and rude; engraved seals are cylindrical like those of Babylonia.

Early Iron Age: wheel-made pottery, either white or bright red, with painted geometrical ornament in black (supplemented on the white ware with purple-red); there is also a black fabric imitating metallic forms.

The early period (1200-1000 B.C.) marks the transition from bronze to iron implements, with survival of Mycenaean decoration on the pottery, and replacement of cylindrical by conical seals.

The middle period (1000-750 B.C.) has purely geometrical decoration: terra-cotta figures are modelled rudely by hand, and painted like the pottery.

The late period (750-500 B.C.) shows foreign influences from Greece and from Phoenicia or Egypt, competing with and enriching the native geometrical style. Scarab seals, blue-glaze beads, and other personal ornaments, and silver objects, appear. Terra-cotta figures stamped in a mould occur side by side with modelled.

Hellenic Age, with increasing influence of Greek arts and industries.

Early or Hellenic period (500-300 B.C.): the native pottery degenerates, and Greek vases and terra-cottas are imported and imitated; jewellery of gold and silver is fairly common and of good quality; with engraved seals set in signet rings: the bronze mirrors are circular, with a handle-spike.

Middle or Hellenistic period (300-50 B.C.): the native pottery is almost wholly replaced by imitations of forms from other parts of the Greek world, especially from Syria and Asia Minor: large handled wine-jars (*amphorae*) are common: terra-cottas and jewellery also follow Greek styles: coloured stones are set in rings and ear-rings.

Late or Graeco-Roman period (50 B.C.-A.D. 400): pottery is partly replaced by vessels of blown glass: clay lamps, red-glazed jugs, so called 'tear-bottles' of spindle-shapes, ear-rings of beads strung on wire, bronze rings and bracelets, circular mirrors without handles, and bronze coins are characteristics.

Byzantine Age (after A.D. 400): Christian burial in surface graves supersedes the use of rock-hewn tombs: funerary equipment goes out of use, except a few personal ornaments, which are of mean appearance, and may bear Christian symbols. Domestic pottery is coarse, ungraceful, and frequently ribbed on the outside. Clay lamps have long nozzles, and Christian symbols. Glass becomes clumsy and less common; and glazed bowls and cups come into use. Occasional rich finds of silver plate (salvers, cups, spoons, &c.) and personal ornaments, have been made among Byzantine ruins.

On mediaeval and later sites, various glazed fabrics of pottery are found, and occasionally examples of the glazed and painted jugs, plates, and tiles known to collectors as 'Rhodian' or 'Damascus' ware.

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Inscriptions occur on settlement-sites, in sanctuaries and associated with tombs: usually cut on slabs or blocks of soft limestone, though marble and other harder stones were used in Hellenistic and Roman times. Besides the ordinary Greek (see Illustration IV), and Roman alphabets the Phoenician alphabet (see Illustrations X and XI) was in use at Kition (Larnaca), in the great sanctuaries at Idalion (Dali), and occasionally elsewhere; and from early times until the fourth century a syllabary peculiar to Cyprus, often very rudely hewn, in irregular lines, on ill-shaped blocks. Such 'Cypriote inscriptions' (see accompanying Illustration VII) are of great value and interest, and have been often overlooked among building material drawn from old sites. In all doubtful cases, a 'squeeze' should be made by one of the methods described in the first part of this volume and submitted to the Keeper of Antiquities. The stamped inscriptions on the handles of wine-jars are worth preserving, as evidence for the course of trade.

Coins were issued in Cyprus from the sixth century onward; first in silver; later (in the fourth century B.C.) occasionally in gold, and from the fourth century commonly in copper. A Ptolemaic coinage succeeded in the third century that of the local rulers; the Roman coinage, with inscriptions sometimes in Greek, sometimes in Latin, lasts from Augustus to the beginning of the third century. Coins of the Byzantine Emperors and of the Lusignan Kings are common.

[*Illustration VII: Bilingual (Greek and Cypriote) dedication to Demeter and Persephone from curium.*]

CHAPTER V

Central and north Syria

[See the diagrams of flint implements, Illustration *ii*; of pottery and weapons, &c., VIII & IX; of alphabets, X & XI.]

The following notes are to be accepted as only a rough and imperfect guide, since no part of Syria, north of Palestine, has been widely or minutely explored, and the archaeology of the earliest period, in Central Syria, for example, is almost unknown.

The periods into which the archaeological history of Syria should be divided are roughly, as follows:

- I. Neolithic and Chalcolithic Age, to about 2000 B.C.
- II. Bronze Age or Early Hittite, to about 1100 B.C.
- III. Iron Age or Late Hittite, to about 550 B.C.
- IV. Persian Period, to about 330 B.C.
- V. Hellenistic Period, to about 100 B.C.



VI. Roman Period.

VII. Byzantine Period.

I. Neolithic.

No purely Neolithic sites yet known, but lowest strata of remains at Sakjagozu and Sinjerli, on the Carchemish citadel, and in certain kilns at Yunus near by, and also pot-burials among house remains are of this Age. (But see Chapter VIII, Mesopotamia, whose Neolithic period is similar.)

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Stone implements: as in Greece, including obsidian of very clear texture, probably of inner Asiatic, not Aegean production. Bone needles and other implements.

Pottery. Four varieties have been observed: (1) buff ground with simple linear decoration applied direct on the gritty body-clay in lustreless pigments, black, chocolate-brown, or red, according to the firing; (2) greenish-buff face, hand-polished, with polychrome varnish decoration of vandykes and other geometric motives; (3) monochrome, black to grey, not burnished, but sometimes decorated with incised linear patterns; (4) plain red or buff (e.g. large urns in which Neolithic burials were found on the Carchemish citadel). All pottery hand-made.

Figurines: rude clay and stone figurines are likely to occur, but have as yet been found very rarely in Neolithic strata.

Copper implements:
traces observed at Carchemish: to be looked for.

II. Bronze Age (Early Hittite).

(a) Early period to about 1500 B.C. Cist-graves made of rough stone slabs, near crude brick houses. Conjunction of such slabs with bricks would be an indication of an early Bronze Age site. Rare pot-burials survive.

Implements. Spear-heads of long tapering form rounded sharply at the base which has long tang (IX, Fig. 5): poker-like butts (IX, Fig. 2): knives with curved tangs: 'toggle' pins: all bronze (but a silver toggle-pin has been found) (IX, Figs. 1,8).

Pottery. All wheel-made but rough: light red or buff faced of reddish clay: decoration rare and only in simple zigzags or waves in reddish-brown pigment: long-stemmed vases of 'champagne-glass' form are common (VIII, Fig. 4): rarely a creamy slip is applied to the red clay.

(b) Later period. Cist-graves apart from houses, in cemeteries.

Implements. Long narrow celts often riveted: spear-heads, leaf-shaped or triangular (IX, Figs. 3, 6, 10): axe-heads with socket, swelling blade and curved cutting edge: pins both 'toggle' and unpierced, straight and bent over.

Pottery. Wheel-made, well potted, and commonly *ring-burnished*, the process beginning at the base of a vase and climbing spirally: little painted decoration: face usually dusky brown over pinkish body clay, but red and yellow-white faced wares also found: shapes, mostly bowls, open and half closed: ring feet, but no handles to vases: only occasionally lug-ears (IX, Figs. 1,2,3,5,6). Rims well turned over belong to the latest period, in which elaborate ring-burnishing is common.



Beads, &c. Diamond-shaped, with incised decoration, in clay or stone, common. Pendants, &c., of shell, lapis lazuli, cornelian, crystal. Cylinders, of rude design like Babylonian First Dynasty, in stone and bone. Spindle-whorls in steatite and clay.

[*Illustration VIII: Syrian pottery*]

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III. Iron Age (Late Hittite).

To this belong the mass of 'Hittite' remains in Syria. Graves are unlined pits, with urn burials, the corpse having been cremated. Cylinders, &c., showing traces of fire, will belong to this Age.

Implements and weapons. Arrow-heads of bronze: spear-heads of bronze and iron: axes, knives, and picks of iron (miniature models occur in graves): daggers of iron. *Fibulae*, of bronze, semicircular and triangular (as in Asia Minor) (IX, Figs. 4, 9, 11): plain armlets of bronze: pins, spatulae, &c., of bronze: thin applique ornaments. Bronze bowls (gilt) with gadroon or lotus ornament (moulded) in later period. Steatite censers, in form of a cup held by a human hand, are not uncommon (IX, Fig. 7).

Pottery. Tall narrow-mouthed urns, bath-shaped vessels, and bell-kraters common (VIII, Fig. 10): trefoil-mouth *oenochorae* and *hydriae*; also *amphorae* (VIII, Fig. 7).

In earlier period, white or drab slipped surface with geometric patterns (rarely rude birds) in black. In later period, pinkish glaze with geometric patterns in black-brown, concentric circles being a common motive. Tripod bowls in unslipped 'kitchen' ware (VIII, Fig. 8). Blue or greenish glazed albarelli, with white, brown, or yellow bands, occur (as in Rhodes).

Figurines. Drab clay, painted with red or black bands and details. Two types: (a) Horsemen; (b) Goddesses of columnar shape, often with flower headdresses, and sometimes carrying a child.

Seals, &c. Scarabs with designs of Egyptian appearance: cylinders, steatite or (more commonly) glazed paste, lightly and often scratchily engraved: hard stone seals finely engraved: flattened spheroids in steatite with Hittite symbols on both faces, inscriptions being often garbled.

Inscriptions. Most of those in Hittite script, both relieved and incised, found in Syria, are of this Age, but chiefly of the earlier part of it (cf. Illustration VI). Those in Semitic characters begin in this Age; and to its later part (8th-7th cents.) belong important Aramaic inscriptions, e.g. the Bar-Rekub monuments of Sinjerli (Shamal). See tables of letter-forms appended to Palestine section, Illustrations X & XI.

IV. Persian Period.

Imported Egyptian and Egypto-Phoenician objects (bronze bowls as in Age III: scarabs: figure-amulets), Rhodian (pottery), Attic (coins, small black-figure vases, &c.).



Weapons and implements. Iron. Long swords: spearheads, socketed, often with square or diamond mid-rib: short double-edged daggers with round pommels: chapes (bronze) with moulded or beaten relief-work: knives, small and slightly curved: arrow-heads (usually bronze and triangular): horse-bits (usually bronze) with heavy knobbed side-bars: ear-rings, wire armlets and pins (generally plain) of bronze: *fibulae* as in Age III: circular mirrors, plain, of bronze: anklets of heavy bronze: kohl-pots, bronze, of hollow cylindrical form, with plain sticks.

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Pottery. As in Age II, plain, polished, rarely ring-burnished, but of less careful workmanship (VIII, Fig. 9.) Glazed albarelli, 'pilgrim-bottles', aryballi, &c., (as in Age III) common. White-yellow slipped ware with bands of black survives rarely from Age III.

Stone vessels.

Bowls on inverted cup-shaped feet not uncommon (VIII, Fig. 11).

Beads and seals. Eye-beads in mosaic glass, and other glass beads (hard stone and bronze more rarely): conoid seals in hard crystalline stones, usually engraved with figure praying to the Moon-god: also soft stone, glass and paste conoids. Scarabs and scaraboids in paste. Cylinders become scarce.

V. Hellenistic. VI. Roman. VII. Byzantine.

Most of the characteristic Syrian products of all these Periods do not differ materially from those found in other East Mediterranean lands, *e.g.* Greece and Asia Minor. The change to Persian (Sassanian) types comes in the late seventh century A.D.

Two classes of objects, examples of the first of which are mostly of Age III, but may be Persian, Hellenistic, or even Roman, are very commonly met with in Syria:

1. Figurines, single or in pairs or threes, of bronze or terra-cotta, representing cult-types. Most common is a standing god with peaked cap, short tunic, and arm raised in act of smiting: a seated goddess also common: figures of animals, especially a bull; and phallic objects (these mainly Roman).

2. Glass plain (iridescent from decay), ribbed, or moulded, in great variety of forms—bowls, jugs, cups, &c. Mostly late Hellenistic, Roman, and Byzantine, and especially common and of fine quality in the Orontes valley.

Parti-coloured glass (with white or yellow bands and threads) is earlier (Persian Period). Painted and enamelled glass with gilt or polychrome designs is later (ninth to fifteenth century, Arab).

[ILLUSTRATION IX: SYRIAN WEAPONS, ETC.]

CHAPTER VI

PALESTINE

[See the diagrams of flint implements, Illustrations II; pottery, XII; alphabets, XIV & XV.]

I. General Principles.

1. Study of the pottery of the country, not merely from books but from actual specimens, is an absolutely essential preliminary. Without an acquaintance with this branch of Palestinian archaeology, so thorough that any sherd presenting the least character can be immediately assigned to its proper period, no field research of any value can be carried out. (See further V below.)

2. A knowledge of the various Semitic alphabets is necessary for copying inscriptions. Unless the traveller be also acquainted with the languages he had better be cautious about copying Semitic inscriptions; without such knowledge he runs the risk of confusing different Semitic letters, which often closely resemble one another. He should, however, be able to make squeezes and photographs.

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The following are the languages and scripts which may be found in Palestinian Epigraphy.

Egyptian, in Hieroglyphics. Greek.
Babylonian Cuneiform. Latin.
Assyrian Cuneiform. Arabic, in Cufic script.
Hebrew, in ancient script. Arabic, in modern script.
Hebrew, in square character. Armenian (in mosaic
Phoenician. pavements, also graffiti
Moabite. in Church of Holy
Aramaic. Sepulchre).

Tables of the chief alphabetic and numeral forms of the West Semitic scripts are given in Illustrations X & XI; for the Greek, see Illustration IV.

3. The traveller should have had practice in making measured drawings of buildings.

4. For some branches of work a good knowledge of Arabic is indispensable—not the miserable pidgin jargon usually spoken by Europeans, nor yet the highly complex literary language, which is unintelligible to the ordinary native, but the colloquial of the country, spoken grammatically and properly pronounced. Work done through dragomans is never entirely satisfactory, because it requires the unattainable condition that the dragoman should be as much a scientific student of anthropology and of archaeology as the traveller himself.

5. The student for whom these pages are written should not attempt any excavation, unless he has been trained under a practical excavator, and has learnt how work, which is essentially and inevitably destructive of evidence, can be made to yield profitable fruit. There is plenty of work that can be done on the surface of the ground without excavation.

[Illustrations X & XI: Table of West Semitic Alphabets & Numerals.]

II. Sites of Towns and Villages.

1. Nomenclature. The sites of ancient towns and villages are usually conspicuous in Palestine, and are recognized in the local nomenclature. They are denoted by the words *tall*, plural *tulul*, meaning 'mound', and *khirbah*, plural *khirab* meaning 'ruin'. These words are commonly spelt in English *tell* and *khirbet* (less correctly *khurbet*) and we use these more familiar forms here. As a rule, though not invariably, the sense of these terms is distinguished. A tell is a site represented by a mound of stratified accumulation, the result of occupation extending over many centuries, and easily recognizable among natural hillocks by its regular shape, smooth sides, and flat top. A

khirbet is a field of ruins in which there is little or no stratification. Nearly all the sites of the latter type are the remains of villages not older than the Byzantine or Roman period.

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2. Identification of ancient sites. This is a task less easy than it appears to be, and many of the current identifications of Biblical sites call for revision. Similarity of name, on which most of these identifications depend, is apt to be misleading; in many cases sites identified thus with Old Testament places are not older than the Byzantine Period. [1] This similarity of name may sometimes be a mere accident; it may also sometimes be accounted for by a transference of site, the inhabitants having for some special reason moved their town to a new situation. In such cases the tell representing the older site may perhaps await identification in the neighbourhood. In attempting to establish identifications, the date of the site, as determined from the potsherds, and its suitability to the recorded history of the ancient site in question, are elements of equal importance with its name.

[1] An example is Khirbet Teku'a, long identified with the Biblical Tekoa.

Note: The traveller should be cautioned against embarking on the study of place-names, identification of scriptural sites, &c., before mastering the principles of Arabic phonetics. Many of the attempts made at rendering the names of Palestinian place-names in European books are simply grotesque. The following are the chief pitfalls:

- (1) Confusion of the vowels, the pronunciation of which is obscure.
- (2) The consonant 'ain, to which the untrained European ear is deaf, and which in consequence is often omitted. Less frequently it may be over-conscientiously inserted in a place where it does not exist. Sometimes the 'ain and its associated vowel are transposed (as *M'alula* for *Ma'lula*) making unpronounceable combinations of consonants.
- (3) The letter *kaf*, often dropped in pronunciation, and therefore often omitted.
- (4) The letter *ghain*, which an unaccustomed ear confuses with either *g* or *r*.
- (5) The reduplicated letters, which a European is apt to hear and to write as single.
- (6) The nuances between the different *d*, *h*, *k*, *t*, and *s* sounds.

3. Surface-exploration of a tell. The stratification can rarely be studied on the surface only: superficial indications of this are obscured by the plough, weather, vegetation, and the activities of modern natives who grub for building-stone and for the chance of buried treasure. Only by trenching can the strata be exposed. An exception to this rule is afforded by *Tell el-Hesi* (Lachish) explored by Dr. Petrie in 1890-1: here the erosion of a stream had exposed enough of the strata for a reconnaissance. In the majority of cases the most that a visitor can hope to do is to pick up stray antiquities on the surface of the ground, and ascertain therefrom the limits of date.



The chief clue is afforded by the pottery (see below, V), sherds of which, large and small, are strewn in considerable numbers on every ancient site. Scarabs, seals, bronze implements, iron fragments, beads, bone ornaments, and the like may also be noticed. A trained eye is essential even for such surface finds: one man may walk over a mound and find nothing, another may walk in his steps and gather quite an interesting harvest of small objects.

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Surface indications of buried buildings (or rather foundations) may be noted both on the top and on the sides of a tell. Lines of wall may not infrequently be traced. Often the vegetation growing on the surface indicates the presence of structures underneath (either by burnt-up patches amid luxuriant growths, or vice versa).

4. Surface exploration of a khirbet. The task here is, generally sneaking, simpler. In a khirbet there is usually no great depth of accumulation; indeed, the bare rock frequently crops up in the middle of such a site. There is, therefore, as a rule only one historical period represented. Potsherds, coins (Roman, Jewish, Byzantine, early Islamic, sometimes Crusader), tesserae of mosaic pavements, fragments of iron nails, beads, minute metal ornaments (as bronze wire finger-rings) are to be picked up on khirbet sites.

The remains of walls are usually more easily traceable in khirbet than in tell sites, though much damage has been done by quarrying for modern buildings. These walls should be carefully examined: buildings other than mere houses (churches, synagogues, baths) may sometimes be detected. Cisterns should be noted. Some of these are not very obvious and the traveller should be on his guard against falling into them.

All stones should be examined, as there is a chance of finding inscriptions.

5. In all work on ancient sites the investigator must make a point of noting everything, irrespective of its apparent importance, and of carefully training a critical judgement in interpreting his observations. It is impossible to lay down general principles that govern every case completely: every site presents its own individual problems.

III. Rock-cut Tombs.

1. All Palestine is honeycombed with rock-cut tombs, which form a fascinating and inexhaustible field of study. Unfortunately all that are in the least degree visible have long ago been rifled, and in recent years those pests, the curio-hunting tourists, have done incalculable harm by stimulating the native tomb-robber and dealer.

2. The explorer of rock-cut tombs must be indifferent to mud, damp, evil smells, noxious insects, and other discomforts, and he must be prepared to squeeze through very narrow passages, much clogged with earth. He is recommended to be on his guard against scorpions and snakes.

3. A plan and vertical section of the tomb should be drawn. The measurements should be taken carefully, not only for the sake of the accuracy of the plan, but also for metrological purposes.

4. The rock outside the entrance of the tomb-chamber should be examined. It often shows rebating or other cutting, designed to receive the foundations of a masonry mausoleum (resembling in general style the rock-hewn monuments in the Kedron Valley at Jerusalem). As a rule such structures have been entirely destroyed for the sake of their stones.

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5. The tool-marks of the tomb-quarriers should be examined, as they sometimes reveal interesting technical points.

6. Every inch of the surface of the excavation, inside and out, must be examined for ornaments, symbols, or inscriptions. These may be either cut or painted, and often are very inconspicuous. Ornaments are usually floral in type, though in late tombs figure-subjects are occasionally to be found. Symbols are either Jewish (the seven-branched candlestick) or Christian (the cross, A-omega, or the like). Inscriptions are not necessarily formally cut: they are sometimes mere scratched graffiti, which would be sure to escape notice unless carefully looked for (as in the so-called 'Tombs of the Prophets' on the Mount of Olives).

7. Dating of tombs. The savage rifling to which Palestinian tombs have been subjected has much reduced the material available for dating them. The following general principles apply to Southern Palestine: those in Northern Palestine and Syria still await a more exact study:

The earliest tombs known in the country were mere natural caves, into which the dead were cast, often very unceremoniously.

In the Second Semitic Period (circa 1800-1400 B.C.) hewn chambers began to be used. These are in the form of cylindrical shafts with a doorway at the bottom leading sideways into the burial-chamber. Natural caves are still frequently used.

In the Third Semitic Period (circa 1400-1000 B.C.) the shaft: form disappears and an artificial cave, rudely hewn out, takes its place. The entrance is in the side of the chamber, though not necessarily at the level of the floor. Rude shelves for the reception of the bodies are sometimes, but not always, cut in the sides of the chamber.

In the Fourth Semitic Period (circa 1000-550 B.C.) the tomb-chambers are of the same kind, but are as a rule smaller.

In Southern Palestine the well-made tomb-chambers, such as are to be seen in great numbers around Jerusalem, are all post-exilic. There is an immense variety in plan, some tombs being single chambers, others complications of several chambers. The late excavation absurdly called the 'Tombs of the Kings' at Jerusalem is quite a labyrinth of rockcut chambers. In exploring such a structure a careful search should be made for devices for deluding thieves: special precautions are sometimes taken to conceal the entrance to inner groups of chambers. There are some interesting examples of this in the cemetery in the *Wadi er-Rababi*, south of Jerusalem. However, all tombs of this period fall into two groups, *kok* tombs and *arcosolium* tombs. In the former the receptacles for bodies are of the kind known by the Hebrew name *kokim*—shafts, of a size to accommodate one body (sometimes large enough for two or three) driven

horizontally into the wall of the chamber. In the normal *kok* tomb-chamber there are nine *kokim*, three in

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each wall except the wall containing the entrance doorway. But there are many other arrangements. In the 'Tombs of the Judges' there is a double row of *kokim* in the entrance chamber. The explorer should not forget that a *kok* sometimes contains a secret entrance to further chambers at its inner end. In *arcosolium* tombs the receptacles are benches cut in the wall, like the berths in a steamer's cabin. These are sometimes sunk, so as to resemble rock-cut sarcophagi.

The late tombs round Jerusalem are in the form of caves driven horizontally into the hill-sides. Further south, e.g. in the region round Beit Jibrin, they are more frequently sunk vertically, the entrance being in the roof of the burial chamber, or approached by a square shaft (a reversion to the Second Semitic form, except that these latter have *round* shafts).

IV. Caves.

The history of the artificial caves hewn in the soft limestone of Palestine, is quite unknown. The caves of the neighbourhood of Beit Jibrin provide ample material for several months' exploration.

Though the caves are labyrinthine there is little fear of an explorer losing his way: he should, however, be well provided with lights, as it would be extremely awkward to be left in the innermost recess of a cave consisting of ten or a dozen chambers united by narrow creep-passages, without adequate illumination. There are occasionally unexpected and dangerous pitfalls: and hyenas and serpents often shelter in the caves. The present writer has explored many of them entirely alone, but this is, on the whole, not to be recommended.

Besides planning the cave, its walls should be searched for inscriptions, &c. It should be remembered, however, that these may have been added at any time and do not necessarily belong to the original excavation. Symbols, apparently of a phallic nature, are sometimes cut on the walls, as well as crosses and other Christian devices, and Cufic inscriptions. Frequently the walls are pitted with the loculi of a columbarium, which, however, appear to be too small to receive cinerary urns and must be intended for some other purpose.

V. Pottery.

Owing to the importance of the subject a special section on Pottery is given here, and the two accompanying plates (XII) show some of the commonest types of vessels. But the student cannot learn all he will need to know of Palestinian pottery from a few pages of print. A representative series of specimens will be found in the Jerusalem Museum: he may supplement his study of these by the perusal of reports on excavations, such as

Petrie, *Tell el-Hesi* (pp. 40-50); Bliss, *A Mound of Many Cities* (passim); *Excavations in Palestine* (pp. 71-141); Macalister, *Excavation of Gezer* (vol. ii, pp. 128-239; and plates); Sellin, *Jericho*; Schumacher, *Tell et-Mutasellim*.

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Pre-Semitic Period (down to circa 2000 B.C.). Ware hand-modelled, without wheel, coarse, gritty, and generally soft-baked and very porous. The section of a clean fracture is usually of a dirty yellowish colour, resembling in appearance coarse oatmeal porridge. Bases usually flat, loop-handles or wavy handles on the bodies of the vessels: mouths wide and lips curved outward. The body of the vessel often decorated with drip lines or with a criss-cross, in red paint.

First Semitic Period (circa 2000-1800 B.C.). Similar to the last: but the potter's wheel is used, and horizontal painted and moulded rope-like ornament also found. Combed ornament and burnished lines frequent.

Second Semitic Period (circa 1800-1400 B.C.). During this period imports from Egypt, Crete, the Aegean Sea, and especially Cyprus were common, and potsherds originating in those countries are frequently to be picked up: also local imitations of these foreign wares. The ware of this period is on the whole well-refined and well-modelled: the most graceful shapes, in jugs and bowls, belong to it. Elaborate polychrome decoration, including figures of birds. But little moulded ornament.

Third Semitic Period (circa 1400-1000 B.C.). The same foreign influences are traceable, but rather as reminiscent local imitations than as direct imports. Late Minoan [Mycenaean] sherds are, however, frequent. The shapes of vessels are less artistic than in the preceding period: the painted ornament is also degenerated, being traced in wiry lines rather than in the bold wash of the preceding period.

Fourth Semitic Period (circa 1000-550 B.C.). Late Cypriote imports. The local ware very poor, coarse, gritty, inartistic. No painted ornament except mere lines: clumsy moulded ornament frequent.

Post-Exilic and Hellenistic Period (circa 550-100 B.C.). Imports from Greece (sometimes fragments of black or red figured vases, or lekythoi) and from the Aegean Islands (especially wine-jars from Rhodes: stamped handles of such are frequent). The native ware is easily recognizable by its smoothness and hardness; when struck with a stick a sherd emits a musical clink. The vessels are very fair imitations of classical models, occasionally with painted ornament, but more frequently moulded.

Roman and Byzantine Period (circa 100 B.C.-A.D. 600). The unmistakable character of the ware of this period is the ribbed surface, with which nearly all vessels are decorated. Fragments of ribbed pottery are strewn almost over all Palestine. Ornament consisting of repeated impressions of stamps now begins to appear. Lamps with decoration, inscriptions, Christian or Jewish symbols common. Glass vessels also frequent.

Arab Period (circa A.D. 600 onwards). The early Arab ware often bears painted decoration singularly like that on Second and Third Semitic pottery, but a fatty soapy

texture characterizes the Arab ware, which is absent from the earlier sherds. There is likewise a complete absence of representation of natural forms (birds and the like). In or about the Crusader period the use of ornamental glaze makes its appearance.

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[Illustration XII: PALESTINIAN POTTERY TYPES]

VI. Sanctuaries.

The hill-top shrines, now consecrated to saints of Islam, are doubtless in origin ancient Canaanite high places. There is here a rich but a very difficult field for investigation. The difficulty lies in (a) gaining the confidence of those to whom the sanctuaries are holy, and (b) guarding against wilful or unconscious deception. Only long residence and frequent intercourse, with the Muslim population will make it possible for any one to obtain really trustworthy information as to the traditions or the sites of these ancient sanctuaries. A knowledge of Arabic is essential for a study of the sites themselves, as there are frequently inscriptions cut or painted on the walls which should be studied. The casual traveller cannot hope to carry out researches of any value on these ancient sites.

Sometimes the buildings are Crusaders' churches transformed. The one really certain fact as to masonry dressing in Palestine may here conveniently be noticed—that Crusader structures are built of well-squared stones with a plane surface finished off with a dressing consisting of very fine diagonal lines. Once seen, this masonry dressing is absolutely unmistakable.

Buildings thus identified as Crusader should be examined for masons' marks.

VII. Miscellaneous.

The following are some other types of ancient remains with which the traveller may meet almost anywhere in Palestine:

(1) Prehistoric (Stone Age) sites. Marked by being strewn with flint implements and chips: see a fine collection in the Museum of the Assumptionists (Notre-Dame de France) at Jerusalem. Specimens should be collected and the site mapped.

(2) Dolmens. Frequent east of Jordan; rare, though not unknown, in Western Palestine. Should be measured, photographed, described, and mapped.

(3) Rock-cuttings of various kinds, which should be measured, planned, and mapped. Among these the commonest are:

- (a) Cisterns (usually bottle-shaped, a narrow neck expanding below).
- (b) Cup-markings, common everywhere. Often associated with cisterns.
- (c) Wine and olive presses: there is a great variety in form, but they generally consist of two essential parts—a shallow *pressing-vat* on which the fruit was crushed, and a deeper *receiving-vat* in which the expressed juice was collected.

The vats are often lined with cement containing datable potsherds, and are sometimes paved with mosaic tesserae. (d) Quarries.

(4) Sacred trees and bushes, recognized by the rags with which they are festooned. Should be photographed and mapped, and their legends ascertained, subject to the cautions given above under the head of Sanctuaries.

(5) Castles and churches, usually of the Crusader period: early Saracenic buildings. Should be recorded by means of plans, photographs, measured drawings, and written descriptions.

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(6) Mosaic pavements, usually belonging to Byzantine buildings; should be recorded by means of coloured drawings.

CHAPTER VII

EGYPT

[See the diagrams of flint implements, Illustration II; pottery, Illustration XIII; and the table of hieroglyphic signs liable to be confused with each other, Illustration I]

First Prehistoric Age, 8000?-7000? B.C. Cemeteries of round or oval pits on the desert; no towns known. Red faced pottery, often with lustrous black top, earliest with patterns of white slip lines: all hand-made. Block figures of ivory or paste. Combs with long teeth and animal tops.

Second Prehistoric Age, 7000?-5500 B.C. Graves, square pits. Red faced, and much coarse brown pottery. Buff with red painting of cordage, spirals, and ships. Pot forms copied from stone. Some pots globular with wavy ledge handles, changing to cylinders with wavy band. Slate palettes in all prehistoric periods.

Early Dynasties, 5500-4700 B.C. Towns and cemeteries. Great mastabas of brick. Wooden coffins begin. Great jars; hard, wheel-made pottery. Glazed tiles, &c. Stone bowls common. Cylinder sealings on clay.

Pyramid Period, IV-VI Dynasties, 4700-4000 B.C. Sculptured stone tomb-chapels. Diorite bowls. Thick brown pot offering bowls. Limestone statues, painted. Cornelian amulets in strings.

VI-XI Dynasties, 4200-3600 B.C. Copper mirrors begin. Buttons, wide face, un-Egyptian work. Pottery models of houses placed on grave edge.

Middle Kingdom, XII-XIII Dynasties, 3600-2900 B.C. Brick pyramids. Large rock tomb-chapels, painted. Hard drab pottery. Alabaster kohl-pots, good forms. Globular beads, large; cornelian, amethyst, and green glaze. Scroll pattern scarabs.

XIV-XVII Dynasties. 2900-1600 B.C. Small flasks with handles, black with pricked patterns. Coarsely cut scarabs. Shell beads.

New Kingdom XVIII-XXI Dynasties, 1587-952 B.C. Small painted tombs. Pottery, red face black edge to 1500; buff, red and black lines to 1400; blue bands 1400-1200. Hard polished drab, about 1400-1350. Glass beads, &c., abundant 1400-1300. Glaze deep blue 1500, brilliant blue 1400, poor blue 1300, green 1200: deep blue ushabtis 1100, pale and rough 1000. Ushabtis, stone or wood engraved 1550-1450, pottery 1450 to very coarse 1250, wood very coarse by 1250; glazed fine 1300, decline to small rough



lumps 800. Beads, minute coloured glaze and stone to 1450, thin discs 1450-1350, coloured pastes red and blue 1450 to 1300, yellow glass mainly 1300- 1200, poor glaze after 1200. Alabaster kohl-pots, clumsy forms to 1450; tubes of stone, glaze, wood, or reed 1450-1200.

Bubastites, XXII-XXV Dynasties, 950-664 B.C. Clumsy large jars, widening to bottom, small handles. Green glazed figures of cat-head goddess, cats, pigs, and sacred eyes; coarse glass beads, yellow and black: copper wire bracelets. Glass beads with blue spots in circles of brown and white. Scarabs coarse and worst at 750. Fine work revived at 700 by Ethiopians. Glazes dull, dirty, green. Glass unknown. Coffins very roughly painted.

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Saites, XXVI-XXX Dynasties, 664-342 B.C. Pottery clumsy, mostly rough: some thin, smooth red. Greek influence; silver coins from 500 onward. Iron tools beginning. Glaze pale greyish and olive: some fine blue at 350. No glass. Bronze figures common. Ushabtis with back pier and beard; fine 650 to poor at 350.

Ptolemies, 332-30 B.C. Pottery clumsy and small. Many Rhodian jars with Greek stamped handles. Glazes, dark violet and yellow-green. Glass revived for inlay figures in shrines: minute mosaic begins. Glazed beads scarce, no scarabs. Large copper coins, silver tetradrachms, base in later time, and concave on reverse.

Romans, 30 B.C.-A.D. 641. The earlier half, to A.D. 300. Large brown amphorae, peg bottoms; ribbed after 180, wide ribbing at first, then narrower. Glass blown; fine white and cut facets in 1st cent.; hollow brims 2nd-4th; stems and pressed feet, 3rd-4th. Glass mosaic 1st cent.; coarser wall mosaic 2nd cent. Glaze coarse blue, on thick clumsy bowls and jugs. Red brick buildings as well as mud brick, coins: billon tetradrachms in 1st cent., almost copper in 2nd, small copper dumps in 3rd, leaden tokens from A.D. 180 to 260. Some large copper in 1st and 2nd, thinner than the Ptolemaic. Potsherds used for writing receipts and letters. Abundance of moulded terra-cottas, and small lamps.

Roman, Second Period, A.D. 300-641. The Constantinian Age brings in new styles. Much salmon-coloured hard pottery, mainly platters and flat dishes. Brown amphorae soft and smaller, with narrow ribbing. No glaze. Much very thin glass. Coins: little thin flat copper, as in rest of Empire, ending about 450. No Egyptian coinage, except a very few rough lumps from Justinian to Heraclius, I+B on back. Letters written on potsherds and flakes of limestone.

Red brick the material for all large buildings. Limestone capitals of debased leafage. Rudely cut relief patterns in wood. Coarsely carved and turned bone or ivory. Pottery in Byzantine Age with white facing and rudely painted figures. Textiles, with embroidery in colours, and especially purple discs with thread designs of the earlier Arab period. A characteristic of late Roman and Arab mounds is the organic smell.

Muhammadan Period. Seventh to fifteenth centuries. Characterized by great amounts of glazed pottery. Smaller antiquities found in cemeteries or on ruined sites, the earliest transitional, and related to Coptic examples of the same kinds. Pottery: lamps at first continue Christian forms and are unglazed; afterwards long spouted lamps of dark green glaze. Fragments of vessels, &c., from the rubbish heaps of old Cairo are glazed; a typical faience has a soft sandy body of light colour with painted designs in blue or blue and brown with transparent glaze. Those of the Mamluk period, and probably some of earlier date, show a general resemblance to Western Asiatic contemporary wares, due to importation of potters from

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Syria, Asia Minor, and Persia (between twelfth and fifteenth centuries). Other varieties have decoration in metallic lustre on an opaque white tin glaze; others again have monochrome glazes imitating imported Chinese wares. Inscriptions very rare. Glass: if found, is in fragments; rich coloured enamel designs are seldom earlier than the thirteenth century. Textiles: chiefly found in small pieces; the colours rich; ornament consisting of geometrical designs and Cufic inscriptions. Any silk, or printed patterns, should be secured.

No information about papyri is given here, for the reason that any site containing them should not be touched except by a trained excavator.

[ILLUSTRATION XIII: EGYPTIAN POTTERY TYPES]

CHAPTER VIII

MESOPOTAMIA

[See the diagrams of flint implements, Illustration II; pottery and brick-forms, Illustration XIV; cuneiform signs, and other scripts Illustration XV].

Mesopotamian antiquities are nearly always found in Tells, or artificial mounds, which are the sites of ancient towns or temples. The surrounding plain for a distance of several hundred yards out, whether steppe-desert or untilled land, will usually be found to be productive of antiquities, either a few inches or few feet deep or, in the case of the dessert, actually lying upon the surface. These are usually the result of rainstorms washing out antiquities from the tell itself. Each tell or ganglion of connected tells usually has a number of small subsidiary tells round about it, the sites of small isolated buildings or villages connected with the central settlement. Originally the settlements were built upon natural rises of the ground which stood up as islands in the fen-country.

Visitors should give the local names of tells in Arabic characters, when possible, so that mistakes in transliteration into English may be avoided. Antiquities bought in the neighbourhood of a tell should be noted as coming from that neighbourhood. Depredations by Arabs (or by others!) should be noted, and reported to the nearest Political Officer or Inspector of Antiquities. The barbarous practice of forcibly dislodging inscribed bricks from walls, as trophies and 'souvenirs', which has unhappily been common during the war, should never be imitated and always discountenanced as much as possible.

Other good spots for antiquities than tells are rare. In the mountainous and stony country of the North we may meet with rock-sculptures, as at Bavian, and these should

always be recorded by a traveller, even if he is not certain that they have not been remarked before: something new may turn up at any time. Antiquities acquired in the neighbourhood of such monuments should be noted, and their precise place of origin ascertained, if possible, as in this way the site of some ancient settlement adjoining the monument may be identified. The open ruin-fields, or *Khurbas*, characteristic of Palestine are not usual, except in the case of Parthian or Sassanian palace ruins such as Ctesiphon, Hatra, or Ukheidhir, which were often abandoned almost as soon as they were built, so that no later population could pile up rubbish-heaps or graves above them.

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In order to aid the visitor to get some idea of the age of a tell or other site from the antiquities found on its surface and its neighbourhood, and so to be able to give some idea of what is likely to be found in it, the following hints have been drawn up.

In the first place, most of the surface remains, are, as elsewhere, pottery sherds. These should tell us their date by their appearance. It must be said, however, that our experience on the subject of the development of Mesopotamian pottery is limited. Owing to the attention of Assyriologists having been so long focussed on the study of the cuneiform records, to the neglect of general archaeology, we have nothing like the knowledge of these things that we have in Egypt or in Greece. Such minutiae of information as our common knowledge of ceramic development in Egypt or in Greece gives us with regard to these countries, enabling us to date sites with great accuracy, are not yet available for Mesopotamia. And if for this reason all possible information as to the objects found on archaeological sites is desirable, it is also impossible yet to give the visitor any absolute guide to the distinctive appearance of pottery at every period. The main periods are known. The 'prehistoric', the Sumerian, the late Babylonian, and the Parthian styles are easily distinguishable. If a visitor is able to tell us that such-and-such a mound is prehistoric or is Parthian, or that settlements of both periods existed on it, this is what we want. One of the most general of criteria with regard to pottery is whether it is glazed or not. If glazed, it is, generally speaking, late. Other things besides pottery are of course found, and the presence or the absence of metal, and the occurrence of stone implements, are important. But it must be remembered that stone was used long into the 'Bronze' Age, and contemporaneously with copper. There is no sudden break between the two periods. Fragments of shell and mother-of-pearl, often with incised designs, are very characteristic of the earliest period. Coins are of late date; a tell with coins on it is certain to contain buildings as late as the fourth or third century B.C. (though it may also contain far older buildings as well). One of the most useful criteria of age is: Bricks. The form of the brick is a very good guide to date. The Babylonians used both kiln-baked and crude bricks. The oldest type, whether baked or crude, is plano-convex in form, and uninscribed. The mortar is bitumen. Later on rectangular bricks, often square, made in moulds, were introduced. These usually bore the name of the royal builder. Later on bricks became generally oblong and much like our own. In the sixth century the square shape was revived. Both shapes were in use at the Nebuchadnezzar period. Glazed bricks were then common. Under the Persians mortar took the place of bitumen. Under the Parthians and Sassanians, bricks were yellow, oblong, small, and very hard. Details will be found below, The names of various excavated sites are given in brackets as the 'classical' sources of information on certain points, and as the places from which type-antiquities have come to our Museums. Ancient names are in capitals; museums in italics.

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I. PREHISTORIC (?) AGE: Chalcolithic (aeneolithic) period, before 3500 B.C.

Until quite recently no traces of the Stone Age had been discovered in Babylonia other than a few possible palaeoliths lying on the surface of the desert: all traces of a Neolithic Age were supposed to have been buried beneath the alluvium of the valley. In Assyria, however, neolithic traces in the shape of obsidian flakes had been discovered by the late Prof. L. W. King in the course of his excavation of the mound of Kuyunjik (NINEVEH), besides fragments of painted pottery resembling those from the earliest deposits in Asia Minor and those found by the American geologist Pumpelly in his diggings in the *kurgans* of Turkestan, (to which he assigned an extremely remote date B.C.). In Persia, and about the head of the Persian Gulf, somewhat similar pottery was discovered by de Morgan and the other French excavators at Susa, Tepe Musyan, Bandar Bushir, and other places: here again the dates were put at a very remote period. With the exception of a few flint saw-blades from Warka [1], Fara, Zurgul, and Babylon [2], no similar remains had been found in Babylonia until, in 1918, Capt. R. Campbell Thompson, exploring on behalf of the British Museum, discovered flint and obsidian flakes and painted pottery lying on the surface of the desert at Tell Abu Shahrein (ERIDU), and also at Tell Muqayyar (UR). The continued excavations carried out by Mr. H. R. Hall for the Museum in 1919 have produced more of the same evidence from both places, besides a new 'prehistoric' site at Tell el-Ma'abed or Tell el-'Obeid near Ur. It seems that these antiquities date from the very end of the neolithic, or rather to the succeeding 'chalcolithic', age; whether they are really prehistoric, as regards Babylonian history, must until more evidence from stratified deposits is found remain undecided. They prove the occupation of the head of the Persian Gulf at the beginning of history by a people whose primitive art was closely akin to that of early Elam, and distinct from that of the Sumerians.

[1] Found by Loftus in 1854: their early date was not recognized at the time. [2] Koldewey, *Excavations at Babylon, E.T.*, p. 261, fig. 182. Koldewey curiously speaks of the saw-blades as 'palaeolithic.' They are, of course, nothing of the sort.

Characteristics: flint, chert, obsidian, green and red jasper, and quartz-crystal flakes, arrowheads, cores, and saw-blades. Chert and limestone rough hoe-blades (easily mistaken for palaeolithic implements; they are, however, much flatter); polished serpentine or jasper celts; lentoid (lentil-shaped), amygdaloid (almond-shaped), and discoid beads of cornelian, crystal, obsidian, &c., unpolished; nails of translucent quartz and obsidian (obviously imitations of metal types); hard grey pottery sickles, pottery cones of various sizes, and pottery objects like gigantic nails bent

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up at the ends; pottery painted with designs in black, usually geometrical (see illustration XIV, Fig. 1), but sometimes showing plant-forms or even animals. This ware is often very fine, so much so as to look as if wheelmade. The shapes are chiefly bowls (often closely resembling early Egyptian stone bowl types), pots with suspension-handles or lugs, and spouted 'kettles'. All these objects are at Shahrein and el-'Obeid found lying on the desert surface at the distance of 50 or 100 yards from the tell; they are supposed to have been washed out of the lower strata of the latter by rains. Objects of this kind should be recorded from any site, and the neighbourhood of a desert tell should always be searched for them.

[ILLUSTRATION XIV MESOPOTAMIAN POTTERY, SEALS, ETC].

[ILLUSTRATION XV: CUNEIFORM AND OTHER SCRIPTS].

II. EARLY BRONZE (Copper) AGE: First Sumerian (pre-Sargonic) Period; c. 3500-3000 B.C. Earliest Sumerian civilization.

Typical sites. Older strata at Telloh (LAGASH); Fara (SHURUPPAK); Tell 'Obeid (ancient name as yet unknown); Shahrein (ERIDU).

Characteristics. Writing. First appearance of script, already conventionalized from pictographs. Cut on stone and incised on clay tablets and bricks of characteristic early style. Brick buildings, with crenellated walls (until the discovery of Tell 'Obeid supposed to date only from the later Sumerian period) of typical plano-convex bricks, baked or crude, usually with thumb-mark down length of convex side (Shahrein), or with two thumb-holes (for carrying the brick when wet?), or vent-holes ('Obeid); at first uninscribed, later with long inscriptions; measuring 10 x 6 x 2-2 1/4 ins. (Shahrein), and 8 x 6 x 2-2 1/4 ins. ('Obeid); poorly shaped and baked (see XIV, Fig. 3). Bitumen used for mortar; laid very thick. Hard white stucco on internal faces of crude brick house walls, often decorated with red, white, and black painted horizontal stripes (Shahrein.) Pottery. Wheel and hand-made; drab, fine or coarse paste, unpainted and usually undecorated. Typical shapes: (see XIV, Figs. 2 abc) mostly handleless vases, and cups, and spouted 'kettles' (again often resembling early Egyptian types).

Metals: Copper. Extensive use: large copper figures of animals, heads cast, bodies of copper plates fastened by nails over a core of clay with a mixture of bitumen and straw; the figures have eyes, tongues, and teeth of red and white stone and nacre (Tell 'Obeid); goat's head with inlaid eyes of nacre (Fara). Otherwise ordinary treatment of eye shows a number of wrinkle lines round it, and it is always disproportionately large (bull's heads, Tell 'Obeid and Telloh). Small fragments of copper or bronze on the surface of a tell should never be neglected, as there may be enough in any fragment to give an idea of possible archaic remains within the tell.

Silver. Rare. Fine engraved vase of Entemena (Telloh, *Louvre*).

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Gold. Not uncommon. Copper nails with gold-plated heads (Shahreïn).

Stone. Portrait figures in round (Bismaya, Telloh, &c.), usually representing men, with face and head shaven; very prominent large curved nose; usually squatting with arms crossed, sometimes standing; only garment a kilt apparently made of locks of natural wool. Usually inscribed in archaic characters on back of shoulders. Material: a grey or a white limestone most usual; tufa and dolerite also used. Reliefs: large stelae (Stele of the Vultures; Telloh, *Louvre*, fragment in *B. M.*), completely inscribed; small relief plaques, inscribed (Telloh, *Louvre*). Flint carved and engraved cylinder-seals, of limestone, black basalt, jasper, diorite, &c. Vases, bowls, and cups (usually fragmentary), of white and pink limestone and breccia. Maceheads of breccia, granite, &c., of same type as the early Egyptian (Shahreïn).

Shell. Very largely used for decoration; small plaques of nacre often engraved with scenes of men worshipping, &c. (Telloh); tessellated pillars with nacre plaques ('Obeid). Seal-cylinders of shell.

Wood. Rarely survives; small beams plated with copper ('Obeid).

Burials. Pottery coffins with lids, mat burials; bodies contracted; funerary furniture, copper, stone or pottery drinking cups held near mouth: copper weapons, fish-hooks, net weights; beads of agate, lapis, shell (unpolished); colour-dishes, (Fara). (The idea that the Babylonians ever burnt their dead is now discredited; the supposed 'fire-necropolises' at Zurghul, &c., are not substantiated.)

The burials are hard to distinguish from similar contracted interments of later date, except that the furniture is more abundant in early times and mat graves are unusual in later days. Mounds of this age may be known by the occurrence on the surface of scraps of oxydized copper, nails, &c.; shell-fragments; undecorated light drab sherds; and the typical small plano-convex bricks.

III. MIDDLE BRONZE AGE. 1. Early Semitic or Akkadian (Sargonid) period; c. 3000-2500 B.C.

Characteristics. Less crude style of art: development of writing (see XIV, Fig. 1); first inscribed clay tablets of usual style; beginnings of cuneiform, developed from the archaic semi-pictographic character. Bricks still plano-convex; stamped inscriptions begin. Stone maceheads of same type as earlier. Large and well-cut cylinder-seals of fine limestone, lapis, diorite, granite, and shell are characteristic of the period: they are generally of an easily recognizable form (reel-shaped) with sides showing a marked concavity (see XIV, Fig. 5). The great development of art is shown by the stele of Naram-Sin (*Louvre*) found at Susa. Not many mounds of this period have been dug.

2. Later Sumerian (Gudea) and early Semitic Babylonian (Hammurabi) periods; c. 2500-1800 B.C.

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Characteristics. Typical 'Gudea' style of sculpture, in round and relief (Telloh, *Louvre*); materials hard diorite, dolerite and basalt as well as limestone: characteristic treatment of eye with heavily marked brows: elaborate tiaras and head-dresses of female figures, &c. Very high development. Regular use of cuneiform on clay tablets and cones (see XV, Figs. 13-15); non-cuneiform character (in a developed form) still used in brick stamps (XV, Fig. 10) and on stone monuments. Bricks (XIV, Fig. 4) now rectangular and well made, either square (14 ins., usually, by 2 1/2 ins. thick) or oblong (11 1/2 x 8 x 2 1/2 ins., or 10 x 5 x 2 1/2 ins.) with stamps or incised inscriptions of Ur-Engur, Dungi, Bur-Sin, Gudea and other kings (XV, Fig. 10), from Ur, Shahrein, Telloh, Niffer, &c. Bricks of Bur-Sin from Shahrein often have inscription-stamps also on the smaller sides (thickness). Great buildings of crude and baked brick (Telloh, Ur); temple-towers (ziggurats) of crude brick faced with burnt brick (Ur, Shahrein, Niffer). Town ruins of Hammurabi's age (Babylon): crude brick: plans always confused and haphazard. Bitumen still used for mortar. Burials, contracted, often in double pots (mouth to mouth), sealed with bitumen. With the bodies are found large numbers of agate and cornelian beads, unpolished.

Mounds of this period may be recognized by the typical square or oblong bricks (often with thumb-holes), with stamps of kings' names, &c., in non-cuneiform characters, or with hand-incised inscriptions in early cuneiform, made while the clay was wet; clay tablets or cones inscribed in early cuneiform; copper nails (those with gold-plated heads found at Shahrein may also date from this time); drab or black pottery sherds with impressed or incised designs, generally rough and evidently made with a piece of stick or the thumb-nail; rough stone quern-slabs with rubbers, grinding and hammer-stones, &c.; and the burials described above (these, however, also occur in later times).

IV. LATER BRONZE AGE: Kassite, Middle Babylonian, and Early Assyrian periods; c. 1800- 1000 B.C.

Characteristics. Stabilization of Babylonian art; typical 'Kassite' cylinder-seals with straight sides (XIV, Fig. 6); disappearance of old non-cuneiform character with gradual disuse of Sumerian; early stone-cut inscriptions in cuneiform (see XV, Fig. 16; an Elamite inscription). Occasional and rare appearance of glazed pottery (imitation of Egyptian), and multi-coloured glass; early Assyrian sculpture (those unversed in minutiae of Mesopotamian art will only be able to tell this earlier work from the later by the earlier style of the accompanying inscriptions). Not many mounds of this period have been dug.

V. EARLY IRON AGE: 1. Late Babylonian and Assyrian periods; c. 1000-540 B.C.

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Characteristics. Flourishing period of Assyrian art and writing (for details see the archaeological books, which are very full on this period). Mounds may be known by the occurrence of fragments of granite or basalt bowl-querns, often with feet; pieces or whole vases of the multi-coloured opaque glass usually called 'Phoenician' (which are already found in the preceding period); alabaster pots; straight-sided cylinder seals (see XIV, Fig. 6); Syrian conical seals of steatite (XIV, Fig. 7); small and rude clay figures of deities, such as Ishtar or Papsukal (the guardian of buildings), and animals, such as horses, sheep, doves, ducks, &c.; bronze pins, often with birds on the heads; baked clay tablets of the fine Kuyunjik type (see XV, Fig. 12; script, Fig. 17); pottery lamps with long protruding curved nozzles; pottery vases simple and undecorated save by incised lines, as for many centuries past (for types see XIV, Figs. 9 a b c d); light-blue glazed ware introduced from Egypt towards end of period; polychrome glazed ware with designs of rosettes, chevrons) &c., somewhat earlier; large pots without feet common for storage of grain and oil, sometimes for tablets: mouth often closed with a brick. Stone pithoi are also found. Vertical drains or sinks, made of a number of pottery cylindrical drums, fitting on top of or into one another, are found everywhere on town-mounds of this period; visitors should avoid tumbling into them, as they are often open or only covered by a very thin crust of earth. Usually they are perforated to allow of soaking into the surrounding earth, and are, when excavated whole, generally found capped by, a beehive-shaped perforated cover. Sometimes these drains were made of old pots with their lower parts broken off, and fitted into one another. Secular buildings were of burnt brick; sacred buildings usually of crude brick, from religious conservatism. Crude bricks nearly always oblong; burnt bricks square (14 ins.) or oblong (9x6x3 ins.). The burnt brick of Nebuchadnezzar's time is extraordinarily fine and hard, and the bitumen-mortar so finely spread as to be almost invisible (Babylon). Walls of this reign have a rock-like solidity and tenacity that should make them easily recognizable. Those of immediately preceding reigns show the bitumen far more clearly, and the bricks are usually not as finely made as Nebuchadnezzar's; at Babylon the latter's work is thus at once distinguishable from that of Nabopolassar. A typical brick-inscription of Nebuchadnezzar is illustrated above, XV, Fig. 11. It is in the revived archaic script, always used for this purpose by the late Babylonian kings. Use of coloured glazed brick is characteristic of period; often relief figures of animals are made up of glazed bricks each specially moulded for its proper position and numbered (Ishtar Gate, Babylon). Royal palaces were often decorated with reliefs depicting conquests, &c., carved on slabs of alabastrine marble placed along the brick walls, with great statues of human-headed

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bulls (*Cherubim*), &c. (Nimrud [CALAH], Kuyunjik [NINEVEH], Khorsabad. *Brit. Mus.* and *Louvre*.) Burials usually in drab clay pot-coffins (larnakes) with covers; bodies still contracted; funerary furniture scanty, consisting chiefly of pins, beads, an occasional cylinder-seal, and a few pots (XIV, Figs. 9 a b c d). Ribbed pots with blue (weathered green) glaze, often pitched both within and without, were also employed towards the end of the period, inverted over the bodies. Also anthropoid pottery sarcophagi, an idea imported from Egypt. Child burials in bowls. Iron objects sometimes buried with the dead; often found in palace-ruins (weapons, horse-furniture, &c.). Bronze commonly used for gates, door, bolts, &c. (Gates of Shalmaneser's palace; *Brit. Mus.*).

2. Persian (Achaemenian) period: c. 540-330 B.C.

This period is distinguished from the former by the less frequent use of bronze, the introduction of coinage, and the development of the simplified Persian cuneiform writing (never on tablets, only on stone monuments; see XV, Fig. 18). Bitumen ceased to be used as mortar in buildings. Persian walls (e. g. the Apadana at Babylon) are easily distinguished by the use of clay mortar, and the unusual thickness of the mortar-courses between the bricks. Burials in shallow trough-like pottery coffins, with the bodies at full length, but with the knees slightly flexed (these continued during the next period).

VI. MIDDLE IRON AGE: 1. Greek and Parthian periods; c. 330 B.C.-220 A.D.

Characteristics. Sudden degeneration and disappearance of the ancient native civilization and art; imitation of Greek culture, Greek buildings (theatre at Babylon), and inscriptions; Greek legends on Parthian coins; Parthian kings call themselves 'Philhellenes'; Graeco-Roman architecture imitated (Hatra). Graeco-Roman terra-cottas, pottery lamps, pilgrim-flasks and bone-carvings; classical seal gems; Roman glass; fragments of imitation of classical sculpture in marble (the material being adopted as well as the style); and, of course, coins—these are characteristic remains found on mounds of this period. About 100 B.C. the use of cuneiform was given up; clay tablets were no longer used. Aramaic became the usual form of writing; ink used on sherds; wax tablets. Small bowls often found with ink-written incantations in Judaeo-Aramaic (see XV, Fig. 19). Mounds of this period are perhaps most easily recognized by the quantities of deep-blue glazed sherds found lying about on them. The glaze is rather thin, laid on a coarse drab ware, and is often cracked. The blue is very fine, rivalling the old Egyptian. Burials of this period are often found in (besides the shallow pottery coffins mentioned above) rectangular oblong boxes of thin coarse ware with light friable blue glaze (Babylon), or (later) in slipper-shaped coffins (possibly Sassanian) of the same ware, rudely

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decorated with human figures (warriors) in relief, on panels (Warka). The blue glaze has often changed to a dark green, especially in the case of the Warka slipper-coffins. The lids are cemented to the coffins. Internments are now full length, the old custom of contraction having been entirely abandoned [1]. Gold ornaments and pieces of gold leaf, gold fillets, &c., are not unfrequently found with the bodies, besides armlets, toe and finger rings, &c., of silver and bronze, the finger-rings usually of ordinary Roman types; pottery, lamps, and glass vessels. These coffins are often in brick vaults, usually placed haphazard in the ground, as in earlier times. Bricks small, hard, and yellow.

[1] The western custom of cremation was never adopted, in spite of the Hellenization of culture. It offended both Babylonian and Iranian sentiment, although the Parthians were never very orthodox followers of Ahuramazda, and venerated (at least platonically) the most popular deities of the Greek pantheon.

2. Sassanian Period; c. 220-650 A.D.

Characteristics. Reaction towards Oriental motives in art: a typical *antika* of the period is the Sassanian seal of cornelian, chalcedony, or haematite, in shape sometimes a ring, more often a flat sphere with one-third cut off to form a seal-base, perforated for stringing (see XIV, Fig. 8), and inscribed in Pehlevi (see XV, Fig. 20) a script that to the uninitiated looks very like Cufic Arabic: the language is Old-Persian, which was spoken by the court officials at Ctesiphon, the language of the people being Aramaic. Sculpture barbarized, but with a picturesque character of its own (Nakhsh-e-Rostam, Tak-e-Bostan), sometimes reminiscent of Indian work. Architecture: Parthian-Roman traditions (Ctesiphon). Pottery usually glazed blue (thicker glaze). Unglazed bowls with Hebrew and Mandaitic magical inscriptions. Bronze no longer used except for coins. Objects from mounds very like those of preceding age, but less of Roman origin. Not much known of burials; the Warka slipper-coffins usually regarded as Parthian may possibly be of early Sassanian age.

VII. LATER IRON AGE: Muhammadan Period; c. 650-1500 A.D.[1]

Characteristics. Development of art under Persian influence till Tartar conquest in thirteenth century: the destruction and depopulation of the country at that time brought all real artistic development to an end. Flourishing period: the 'Abbasid Khalifate: ninth century: Harun al-Rashid. Ruins of the ancient city and palaces of Samarra: halls with modelled and painted plaster-decorations, not only geometrical but also (Persian heterodox influence) representing trees, birds, &c. No more sculpture in round or relief of human figures or animals. The only survival of classical tradition would appear to be to some extent in architecture: Greek architects.

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Coins: thin gold, and silver, with Cufic inscriptions only (see XV, Fig. 21). Mounds of this period may be known by fragments of marble-carving with Cufic inscriptions, plasterwork, Arab and Persian vase and tile fragments in thick blue, green, yellow, or brown glaze, metallic lustre-glaze, &c., variegated glass bangles, and rings; bits of cloudy white glass (from lamps); fragments of wood, carved and inlaid with bone, nacre, &c., in geometrical patterns; textile fragments, (which are naturally not commonly found in older mounds), &c.

Nothing is said with regard to burials as these may not be touched.

[1] The limit of age which constitutes an 'antiquity' for legal purposes is fixed in most antiquity-laws at 1500 A.D.

APPENDIX

LAWS OF ANTIQUITIES

The following brief notes on the Laws of Antiquities in force in the various territories with which this book is concerned must not be taken as absolving the traveller from the necessity of consulting the full text of the laws. At the time of going to press, the Turkish Law presumably prevails in such parts of the Turkish Empire as are not occupied by the troops of the Entente; in the remainder, temporary regulations are in force which will doubtless be modified when the new governments are established; and it is possible that the Turkish Law itself may be brought into greater harmony with modern ideas.

The Greek Law of Antiquities.

[Greek], 24 July 1899, Athens, [Greek] 1889.

All antiquities found are the property of the Government and are controlled by an Archaeological Commission, consisting of the Ephor General of Antiquities and the ephors of the archaeological collections in Athens. Fixed antiquities must be reported by the discoverer to the Ephor General or one of the ephors of antiquities or other official. Damaging of ruins or remains of monuments is forbidden. Owners of the land on which portable antiquities desirable for the National Museums are found are compensated to the extent of half their value. Any person who finds antiquities on his land must report them within five days, on pain of confiscation. The same applies to any one who finds antiquities on another person's land, or in any other way comes into possession of antiquities. Informers against breaches of the law are rewarded by the amount of the compensation due to those who keep the law. Objects not considered worth keeping by the Museums are returned to the owner of the land. Excavations, even on private property, must be authorized by the Ministry of Education. The Government has the right of expropriating land for purposes of excavation. In

Government excavations, the owner of the land receives one-third of the value of the objects considered worth keeping by the Museums. Secret excavation is punished by confiscation of the finds, imprisonment and temporary loss of civil rights.

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In authorized excavations by a landowner or his representative the excavator receives half the value of the finds taken by the Museums. Any one attempting to excavate on another man's land is punished by imprisonment. Antiquities found in the country may not be exported (on pain of imprisonment or fine and temporary loss of civil rights) without permission, which is only granted for objects not considered by the Archaeological Commission to be of use to the Museums. Such objects on export are subject to a tax of 10 percent. *ad valorem* unless declared entirely valueless by the Commission. Antiquities imported into the country must be declared in the Customs House and reported to the Ephor General of Antiquities, a descriptive catalogue in duplicate being sent, and cannot be re-exported without permission, which is obtained by producing the articles with the original catalogue to the Ephor General; if not reported they are regarded as having been found in the country.

The Turkish Law of Antiquities.

Loi sur les Antiquites promulguee le 29 Sefer 1324 (10 Avril 1322). Extrait du *Levant Herald* du 8, 9, 11 et 13 Juin 1906. Constantinople, Imprimerie du *Levant Herald*, Pera, 1906.

Antiquities are controlled by the Director-General of the Imperial Museums and a Commission, the Directors of Public Instruction in the provinces acting as agents. All ancient monuments and objects (including those of Islamic date) are the property of the Government. Any fixed antiquities discovered must be reported under pain of fine within 15 days to the official in charge of antiquities, or in his absence to the nearest civil or military official. Punishment by fine and imprisonment is inflicted for destroying or injuring monuments, measuring or making impressions without authorization.

Transportable antiquities found on a man's land must be reported by him within a week. The landowner receives half the value of objects thus reported and bought by the State; objects not reported are confiscated, and the landowner fined. This clause applies to those who find antiquities on land belonging to other private persons or to the State. Excavation is the exclusive privilege of the Museums, but firmans may be obtained by scientific societies and specialists. Unauthorized excavation is punished by imprisonment and confiscation. The State has the right of making preliminary soundings and of expropriation. Applications for leave to excavate must be made to the Minister of Public Instruction. All finds belong to the State. Unauthorized dealing in antiquities is punishable by fine, imprisonment, and confiscation. Exportation of antiquities found in the Empire is forbidden. Antiquities imported must be reported to the directorate of antiquities, and may not be sent from one part of the Empire to another, or re-exported, without permission from the Director-General.

The Cypriote Law of Antiquities.

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To Consolidate and Amend the Law relating to Ancient Monuments and Antiquities, and to provide Museums. Law no. IV of 1905. See Sir J. T. Hutchinson and S. Fisher, *The Statute Laws of Cyprus*, 1878-1906 (London, 1906), pp. 595-608.

Objects later than the Turkish conquest, and coins of Byzantine or later times, are not deemed to be antiquities. All undiscovered antiquities of movable character are the property of the Government; all immovable antiquities are also the property of the Government, unless some person shall be the owner of them. All antiquities must be reported by the person in possession of them to the Museum Committee, on pain of confiscation; antiquities found except in the course of authorized excavations must be reported within five days to the District Commissioner, One-third of such movable antiquities is taken by the Government, one-third by the finder, and one-third by the owner of the land. Damage to ancient monuments is punished by fine or imprisonment or both. Unauthorized excavation, even on land belonging to the excavator, and the purchasing of objects illegally excavated, are punished by fine or imprisonment or both. Application for leave to excavate must be made to the Chief Secretary for Government. All antiquities found in excavation belong to the Government; only duplicates, and objects not required by the Museum, are given to the excavator. The Government has the right to expropriate land for the purpose of excavations. The Museum Committee may acquire the interests of any private person in an antiquity on payment of compensation. If the sum agreed on is not paid within six months, the Museum Committee loses all right to its acquisition. Export of antiquities is forbidden except with the permission of the High Commissioner, which is granted only for objects not required by the Museum or for antiquities the interests in which the Museum Committee has failed to acquire in the manner described.

The Egyptian Law of Antiquities.

La Nouvelle Loi sur les Antiquites de l'Egypte et ses annexes. Service des Antiquites. Le Caire, Imprimerie de l'Institut francais d'archeologie orientala. 1913.

All antiquities belong to the State. The State has the right of expropriating ground containing antiquities. Transportable antiquities when found must be reported to nearest administrative authority or agents of the Service of Antiquities: the finder receives half the objects thus reported or their value. Excavation, dealing in antiquities, and exportation are forbidden unless under authorization. Destruction of and damage to antiquities is punishable by fine and imprisonment. Applications for leave to export or to excavate should be made to the Director-General of Service of Antiquities. A tax of 1 1/2 per cent. is levied on the declared value of objects passed for export. Leave to excavate is granted only to savants recommended by Governments or learned societies, or to private persons presenting proper guarantees. The excavator pays the cost of guarding the site. The Government takes half the portable objects found.

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General Principles of a Model Law of Antiquities for the Near and Middle East.

The following statement of Principles which should form the foundation of the Laws of Antiquities to be enacted for the various Provinces formerly under Turkish rule was drawn up by an International Committee in Paris and recommended to the Commission for regulating the Mandates under the League of Nations. It follows closely the Recommendations of the Archaeological Joint Committee on the same subject. It was proposed at the same time that the Treaty with Turkey should enjoin the adoption by that Power of a Law of Antiquities on the same lines:

Principes du reglement devant etre adopte par chacune des Puissances mandataires.

1. 'ANTIQUITY' signifie toute construction, tout produit de l'activite humaine, anterieur a l'annee 1700.

2, Toute personne qui, ayant decouvert une antiquite, la signalera a un employe du Departement des Antiquites du pays, sera recompensee suivant la valeur de l'objet, le principe a adopter devant etre d'agir par encouragement plutot que par menace.

3. Aucun objet antique ne pourra etre vendu sauf au Departement des Antiquites du pays, mais si ce Departement renonce a l'acquiescer la vente en deviendra libre. Aucune antiquite ne pourra sortir du pays sans un permis d'exportation dudit Departement.

4. Toute personne qui, expresse ou par negligence, detruira ou deteriorera un objet ou une construction antique, devra etre passible d'une peine a fixer par l'autorite du pays.

5. Aucun deblaiement ni aucune fouille ayant pour objet la recherche d'antiquites ne seront permis sous peine d'amende, sauf aux personnes autorisees par le Departement des Antiquites du pays.

6. Des conditions equitables devront etre fixees par chaque Puissance mandataire pour l'expropriation temporaire ou permanente des terrains qui pourraient offrir un interet historique ou archeologique.

7. Les autorisations pour les fouilles ne devront etre accordees qu'aux personnes qui offrent des garanties suffisantes d'experience archeologique. Aucune des Puissances mandataires ne devra, en accordant ces autorisations, agir de facon a ecarter, sans motif valable, les savants des autres nations.

8. Les produits des fouilles pourront etre divises entre le fouilleur et le Departement des Antiquites de chaque pays dans une proportion fixee par ce Departement. Si, pour des raisons scientifiques, la division ne semble pas possible, le fouilleur devra recevoir, au lieu d'une partie de la trouvaille, une juste indemnite.



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