AN OUTLINE OF CHRISTIANITY

THE STORY OF OUR CIVILIZATION

IN FIVE VOLUMES

Illustrated in Color and in Black and White

VOLUME FOUR

CHRISTIANITY AND MODERN THOUGHT

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VOLUME FOUR

CHRISTIANITY AND MODERN THOUGHT

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BOOK VI

CHRISTIANITY AND FAITH

CHAPTER XXVI

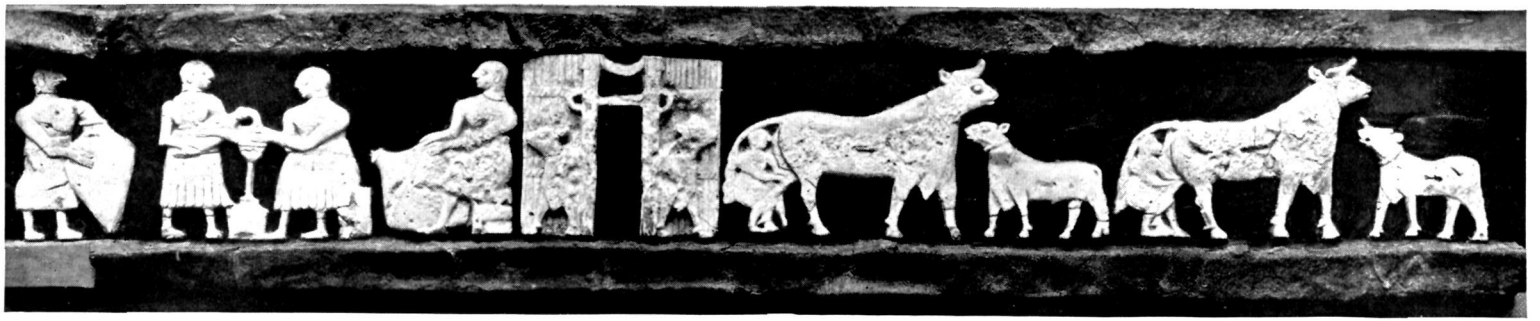
THE UNCOVERING OF THE BURIED PAST

To the archaeologist every ancient relic is a "document". Some of these are of course immeasurably more important than others, but even unpromising material may yield much information in the hands of a skilful and patient investigator.

ARCHAEOLOGY is ordinarily associated in the mind with the idea of a museum of antiquities—a well-ordered modern collection, it may be, with the objects so arranged as to tell the story of the past. Fifty years ago it would more probably have been a few dusty cases of Indian curiosities, mostly flint arrow-heads, arranged according to their shapes and colors. But objects in cases are only the dry bones of the science of archaeology, no matter how well arranged, and of comparatively little value unless the date, the place of discovery, and the associated evidence have been accurately recorded. The purpose of the field-archaeologist of the present day is not solely to obtain objects which may be placed in a museum, nor to expose the buildings left by the ancient races. His material consists in the physical evidences left by man in or on the surface of the earth, constructions and ancient excavations, cities and cemeteries, and all that may be found in or about them, vessels, implements, weapons, sculptures, paintings, inscriptions, personal ornaments, clothing, mats, baskets, the bones of men and animals, every visible trace of human existence and activity. But in dealing with this material the purpose of the archaeologist must be to recover every vestige of the historical evidence which the ancient site has preserved, and to utilize this evidence for the reconstruction of the history and the daily life of the peoples of past ages.

Every ancient city or cemetery discovered is represented by an accumulation of deposits, that is to say, an archaeological formation, a result partly of acts of man and partly of the action of natural forces. Men build houses and temples and city walls, and occupy them for generations, filling the rooms and courts with the utensils of daily life, the inscriptions, the statues, and all the apparatus of administration, industry, and commerce. As the decades pass, the great public buildings with their massive walls endure, and their floors remain on the old level; but the poorly built shops and residences decay and are replaced by newer shops and residences built over the ruins of the older ones. Thus the city surrounding the great buildings is continually being renewed not as a whole, but house by house. It rises on the débris of its own decay until the levels of the floors lie high above those of the temples and palaces. Some great catastrophe overwhelms that city—war, pestilence, earthquake, or a change in the trade routes or in the conditions of commerce—so that the city is destroyed or abandoned. Its walls disintegrate and bury their lower parts in their own débris of decay, laid down by wind and weather. An accumulation of this sort, provided no later city or cemetery is constructed on the same site, may be called a simple archaeological formation.

But often after a few months or, it may be, a few generations, a second city comes to be built on the ruins of the first, and this invariably causes more or less destruction of the buildings and the deposits of the first city. First of all, levelling operations will have been undertaken which cut down the old mound. Often the better building-stones of the old walls are removed for use in the new walls, thus destroying to some extent the very skeleton of the older city. Foundation trenches have to be dug which, in the case of new great public buildings, cut through all the old deposits and introduce later objects into the earlier levels of the old city. Once constructed, the second city follows the life history of the first; and thus each successive city built on the old site adds its series of constructions and increases the damage done to older accumulations.



Portion of the frieze *Temple of Tell-el-Obeid*

THE GREAT COURTYARD ON THE SOUTHWEST SIDE OF E-DUB-LAL-MAKH, ONE OF THE CHIEF SHRINES OF UR, SHOWING THE STEPS APPROACHING THE ZIGGURAT

Massorah, greater and lesser, in margins

PENTATEUCH IN HEBREW, NINTH CENTURY

Earliest exactly dated MS. of the Bible

SYRIAC VERSION OF PENTATEUCH, A.D. 464

An interesting example of a city mound containing the evidence of successive cities was that of the city of Samaria. Founded by Omri in the ninth century B.C., the Israelite city of Samaria was destroyed by the Assyrians, and the people were carried into captivity. Not long after this conquest by Sargon, in B.C. 722, a second city was built over the Israelite ruins, largely with stones from the older city, by the colonists sent out by the Assyrian kings. The second city, although reconstructed and repaired several times, appears to have been occupied until B.C. 107, when it was destroyed by the Maccabeans. A third city was built about B.C. 60 by Gabinius, and later, while this was still standing, the place was appropriated by Herod the Great, who proceeded to construct a great temple dedicated to Augustus, and other public buildings, and to remodel the whole site. The temple was planned to stand on top of the hill, a position which set it above the ruins of the palace of Omri and Ahab, then buried under the débris of the three older cities. Foundation trenches for the new temple's massive walls were dug through all the earlier deposits down to rock or its equivalent, that is, down to the old Israelite foundations. The walls, when finished, did not fill the trenches, there being a space twenty to thirty centimeters wide on each side, and this space was filled with rubbish from the top. The result was that, at the bottom of these trenches, the excavators in our own day found objects of the time of Herod on the same level and in close proximity to, objects eight centuries older, of the time of Omri and Ahab.

Such city mounds containing two or more successive settlements may be designated as complex formations. In the same way, an ancient cemetery may consist of tombs of one period only, in which case it is called a simple formation, or like the great cemetery of King Cheops at Giza it may consist of several cemeteries made on the same area and be known as a complex formation.

Now whether an ancient accumulation be simple or complex, whether it be a city mound or a buried cemetery, the archaeologist of today sets himself the task of taking it apart and

analyzing it, in an order the reverse of that in which it was built up. In a simple formation the process is comparatively easy, but in a complex site, and especially in a complex city mound, the excavation and interpretation of the evidence is a most difficult task. For in that case the differences in level between the stationary public buildings and the last stage of the growing residence quarters, together with the destruction of the older remains by the later cities, will have resulted in a complicated accumulation of deposits, some horizontal, some vertical, some laid on a slope.

The archaeologist searches for evidence of the history of the site. Only by isolating each one of the structures and deposits, and by fixing the relative dates of each, can he hope to discover the chronological series of events which have produced the accumulation. If he carries out this work successfully, interpreting correctly each bit of evidence, then each object and each fact recovered and assigned to its proper place in the series of events becomes one of a group of dated objects and facts. The archaeologist is most interested in such dated groups, and in chronological series of dated groups, for it is from such series that he reconstructs knowledge of the arts and crafts, the manners and customs, the religious beliefs and the culture of each period, and deduces the development of all these phases of life through the ages. Only by means of such chronological series of archaeological groups can the historian determine the causes of the growth and decay of civilizations.

No one has ever been able to copy correctly an inscription in an ancient language unless he knows the script and the language, and understands the meaning as he copies. Similarly in the case of excavations, it is impossible to perceive the evidence in an archaeological formation and to interpret it correctly except after long experience in excavating sites of like character. The untrained man is unable to see the differences in the consistency of the earth, the evidences of floors, the angles of the depositions of earth, and the many minor points which are significant to the skilled excavator, and assist him in reading the formation as he goes. For the excavator, unlike the

student of manuscripts, has only one opportunity to read his material—the moment when it is uncovered. He is a destroyer, and if he fails in his work only unintelligible buildings and relics remain.

It is, therefore, a crime against science for an untrained archaeologist to exploit the buried historical material of an ancient land for his personal amusement, his private profit, or even to fill the cases of a public museum.

The distinguishing mark of the field-archaeologist of the present time is his conscientious recognition of his duty to organize and systematize his methods of rescuing the historical material which as an excavator he is obliged to destroy. For the separate processes—excavation, observation, recording, and classification—are inextricably connected. It is impossible to observe correctly unless the excavations have been properly carried out; and it is impossible to excavate properly unless the excavator be guided by a body of accumulated memories. He cannot record by photography the facts which have escaped his observation, nor can he classify that which has not been recorded. Modern scientific archaeology requires records of abundant observed facts, and views isolated instances with critical suspicion.

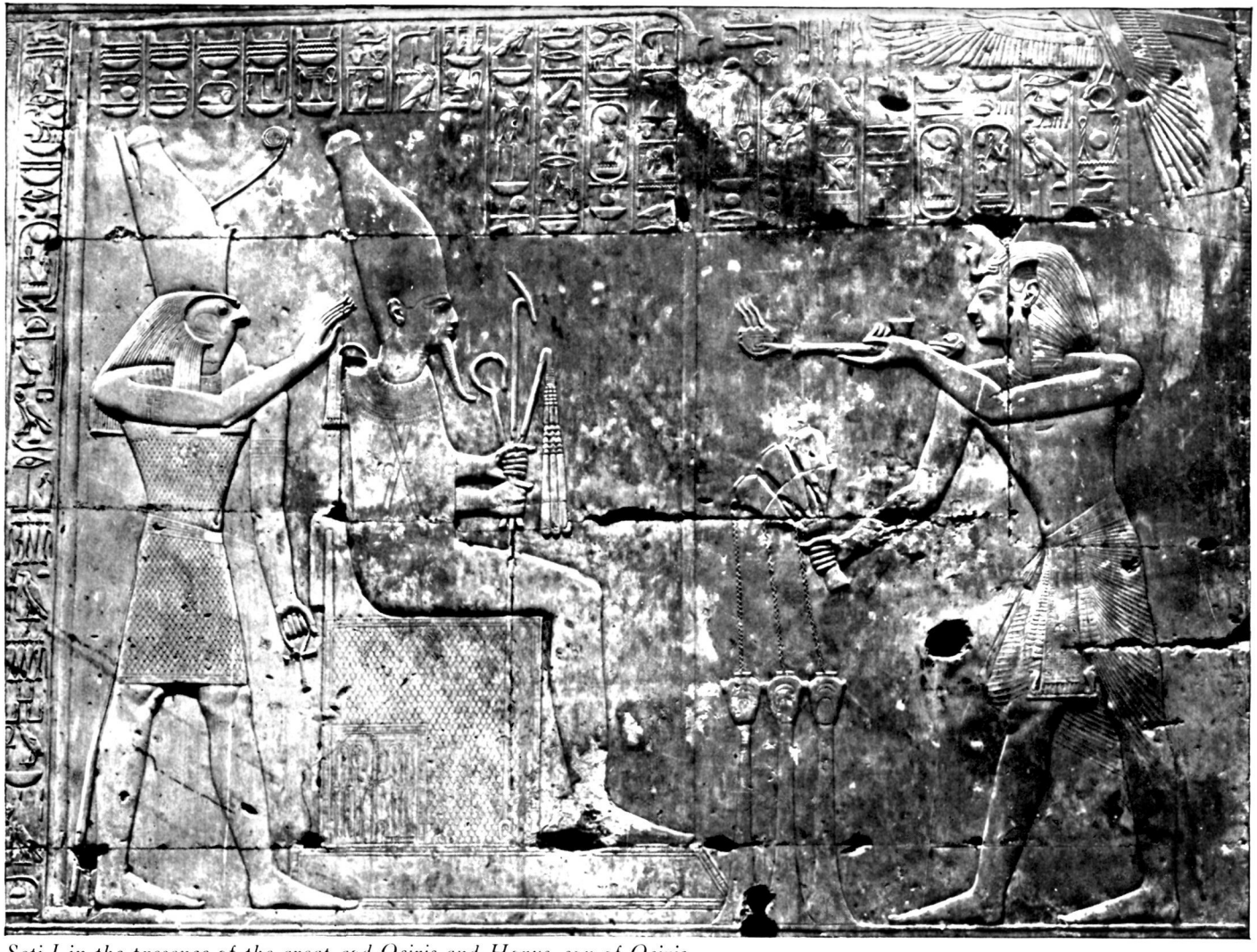
Since archaeology, as a branch of historical research, is mainly concerned with the chronological series of facts and the causal succession of events, it must adopt some sort of chronological framework or skeleton on which the observed facts can be fixed in time. As far as possible all such chronological skeletons are interpreted in terms of our modern calendar which, taking as zero the point in time assumed for the birth of Christ, affords a means of counting indefinitely backwards and forwards in terms of solar years. The various eras and calendars of antiquity have been fixed as accurately as possible according to this modern skeleton. The dates B.C. of the reigns and the dynasties of Egypt and Mesopotamia have been worked out by comparison of ancient documents with one another. Dates have been determined with reasonable accuracy up to a point about B.C. 1600 in Egypt, and about

B.C. 1800 in Babylonia. Beyond these points, in both countries, gaps occur in the documentary evidence, and although the names of kings and the lengths of their reigns are known for long periods in the preceding ages, the lengths of these intermediate gaps are still undetermined.

For example in Egypt dates are well fixed back to the beginning of the New Kingdom (B.C. 1600); but the length of the period between the end of the preceding Middle Kingdom and the beginning of the New is so uncertain that the dates for the Middle Kingdom can only be stated with an allowance for error amounting to a hundred years. Between the Middle and the Old Kingdoms, again, falls a gap of indeterminate length, and we reach the reign of Menes, first king of Dynasty I, with an uncertainty amounting to plus or minus three hundred years. Thus with all proper reserve, one should estimate the reign of Menes as falling between B.C. 4000 and 3400. Similar conservative calculations for Babylonia reach much the same vague period for the earliest documented reigns of that land. In both cases further discoveries in the next few decades will probably bring greater exactitude.

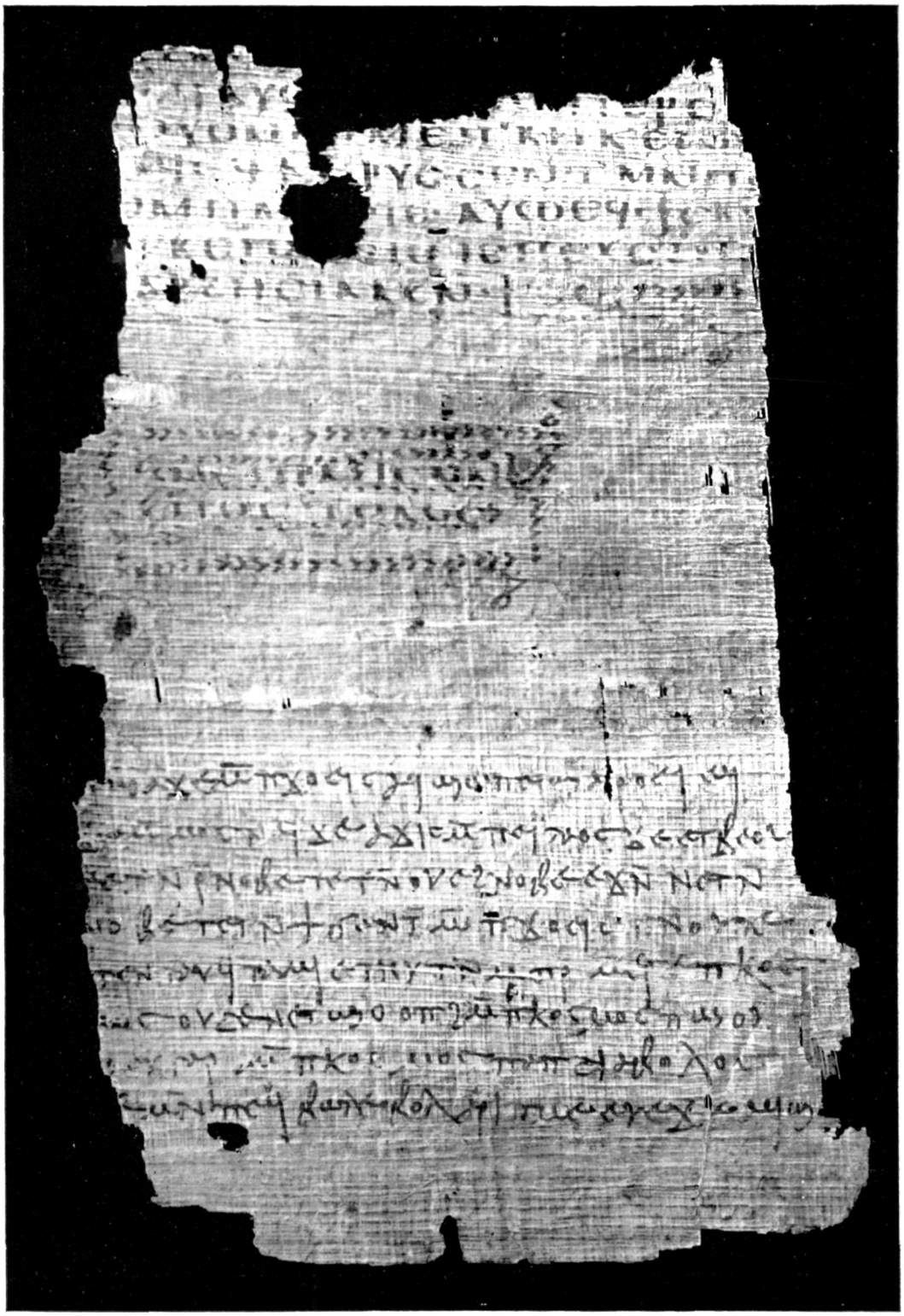
The major part of the existing archaeological material in the case of Egypt has been provided for us by the dominance of an idea which was basic in the thought of the ancient Egyptians, the belief in the continued existence of the individual in a spirit-form after the death of the body.

The spirit-form, the *ka,* was supposed to have the same physical necessities and desires as the man on earth, and a happy life in the other world required that the *ka* be supplied with food, drink, bedding, clothing, ointments, personal ornaments, weapons, tools, implements, utensils, pleasures of the field and the chase, the associations of family life, and the rank and honors to which the man had been accustomed. Unless some means were found of providing these things, the soul would suffer hunger, thirst, and deprivation through endless time, or perish miserably. The obvious means was to place in the grave with the body the objects actually used by the man in his daily life, together with a supply of bread, beer, and meat.



Seti I in the presence of the great god Osiris and Horus, son of Osiris

RELIEF FROM THE TEMPLE OF SETI I AT ABYDOS



Dating before the end of the fourth century

FRAGMENT OF COPTIC VERSION OF DEUTERONOMY, JONAH, AND THE ACTS

Very early in the history of Egypt cheap models began to be substituted for actual objects. It was believed that by means of these models effective spirit-forms could be created for the use of the *ka*. Another means, the use of which was probable in the earliest times and is proved for all dynastic periods, consisted in periodical offerings of food and drink. These were brought to the grave-side, and magical formulas were spoken to make the spirit-equivalents of the offerings available as sustenance for the spirits of the dead.

In Egypt, as in most other countries, every tomb had two parts—the underground burial chamber and the superstructure marking the place of the grave. In Egyptian practice the superstructure contained the offering niche, or "false door", through which the *ka* passed to and fro, and before which the offerings were presented.

Without pausing on the details of the complicated evolution of the superstructure of the Egyptian tomb, we may say that in the Old Kingdom (B.C. 3150 plus or minus 300 years, to B.C. 2600 plus or minus 200 years) the offering place, still containing the "false door", had developed into a large room or series of rooms, on the walls of which were paintings or painted reliefs representing not merely the objects and supplies needed in the future life, but also all sorts of scenes from daily life—agriculture, pasturage, hunting, fishing, dancing, playing, games, and the practice of all the arts and crafts. Towards the end of the Old Kingdom the models placed in the burial chamber also increased in number and complexity, and included similar scenes from life. This custom continued down to the end of the Middle Kingdom (B.C. 1950 plus or minus 100 years). After that time, the spread of the Osiris religion brought in the use of magical objects, often inscribed with magical texts which secured the special privileges of the Osirian life after death for the dead man, but without omission of the prehistoric custom of placing the objects of daily life in the grave.

By reason of these burial customs the graves discovered reflect the life of the people. The more primitive the period, the more exact is the reflection. For, in later times, objects which had

passed out of use and custom in daily life are found persisting in the traditional equipment of the grave. The presence of such traditional objects, made especially for the grave, blurs the reflection of the contemporary daily life with half-forgotten images of the useful objects of earlier periods. Yet even to the last the adherence to the old idea, that life after death was like life on earth, has left us a proportion of tombs furnished with objects used in the daily life.

If a grave is dated directly by inscriptions or indirectly by association with dated material, the grave and its contents will indicate more or less fully the character of the arts and crafts, the manners and customs, and the religious beliefs of the period. As other graves come to be found dated to the same period, our knowledge of the objects and facts connected with that time becomes more and more nearly complete; but often a single very large and well-provided tomb may furnish sufficient material for a satisfactory reconstruction. Such a body of material gathered from graves or buildings of one period we may call the archaeological group of that period.

If a series of such archaeological groups can be constructed, each dated to a certain period, it is obvious that the series will run parallel to the chronological skeleton on which is written the country's history. Thus a second chronological skeleton is created side by side with the series of dated reigns; so that graves or buildings or deposits, of objects not dated by inscriptions mentioning the reign, may be dated by matching them with one of the acknowledged groups of this second chronological skeleton. Most experienced excavators in Egypt carry in the memory the details of the main archaeological groups; with the first glance at a tomb they can name the approximate date —pre-dynastic, early dynastic, Dynasty III, Old Kingdom, Middle Kingdom, and so forth.

The importance of the series of archaeological groups becomes paramount when the two great gaps in the Egyptian chronological skeleton are reached—one between the Old and Middle Kingdoms, and the other between the Middle and the New Kingdoms. And when the historian is dealing with a

race that never used writing at all, or with the primitive epoch of a nation before the people acquired the use of writing, the series of groups become the sole means of dealing with the chronological succession of facts and events.

The archaeological material used in these series consists of the work of the hands of the common people—the potters, the masons, the weavers, the smiths, the flint-chippers, the stone-workers, and all such craftsmen. The knowledge possessed by these artisans—together with the manners and customs of the time—was handed down through the generations from individual to individual, from father to son, from master to apprentice. The passing on of the inheritance is a gradual process continuing year by year, month by month, day by day. If we take the body of physical facts pertaining to one day in the life of a primitive community, and compare it with the body of facts of the following day, there will probably be no difference observable. Generations may elapse before any marked variation is noted. The styles or fashions of a primitive community change very little from generation to generation, and the changes, when they come, are usually of a cultural character: those produced by the invention of the practical use of metals, the discovery of new beds of minerals, the unification of the tribes into larger political units, or the invention of some machine, such as the bow-drill, the weighted crank-borer for boring stone, the potter's wheel.

In the case of a community forming part of a more developed social organism, where styles and fashions as well as the growth and decay of technical ability are subject to more rapid changes, differences will be observable after a short course of years, and certainly after an average generation. Of the artisans whose work constitutes the body of facts of the "fixed day" (representing an ascertained date) some will still be living, some will have passed on their methods and traditions to their sons and apprentices, and some will have been supplanted by young craftsmen using new methods or new forms. Thus the body of facts of the later day will contain some items identical with those of the fixed day, some items similar to the earlier

but visibly modified, and some unknown in the earlier group. But as a whole each of the two groups will be unique.

These principles may be illustrated by the work done on the chronology of Ethiopia. The Harvard-Boston expedition excavated at Nuri and El-Kur'uw (below the Fourth Cataract of the Nile in the river's great Nubian S-shaped bend) the tombs of twenty-six kings of the Napatan Kingdom of Ethiopia, half of them previously unknown. It was certain that these constituted the entire line of the Napatan kings and that they had ruled in succession. The order of the first six was known, except for a few uncertainties, and in the case of the fourth, fifth, and sixth the correct dates of the reigns. The problem was to arrange the remaining twenty kings in chronological order. There was a tomb group for each royal pyramid, representing a series of twenty archaeological groups, each separated by about one generation from the preceding and the succeeding groups. A comparison of these groups on the basis of their resemblances and their differences led immediately to the determination of the relative position of each in the series, and therefore of the chronological order of the Napatan kings of Ethiopia. The beginning of the series was fixed chronologically by the known dates for the reigns of two early kings, Tirhaqa and Tanutamon, and a calculation of all known factors based on the average length of human reigns gave an approximate date for each king. Later, the pyramids of the kings of Meroë were excavated. (Meroë, sixty camel-hours to the south-east, succeeded Napata as the capital of Ethiopia). The order of its kings was determined by a similar process, and their dates were calculated from another fixed point, the reign of Ergamenes, back to the end of the Napatan kingdom. The dates were found to be apparently correct to within ten years.

CHAPTER XXVII

OUR GROWING KNOWLEDGE OF EGYPTIAN AND BABYLONIAN CIVILIZATION

Babylonia and Egypt, the two great neighbors of the Holy Land, are constant and familiar themes in the Old Testament. In the last two generations the labors of archaeologists have almost literally raised the history of Babylonia from the dead; we know it intimately for a space of some twenty centuries and in outline for over twenty centuries more. In our knowledge of Egypt there were perhaps fewer gaps to be filled, but many of the discoveries have been of a startling character.

WHEN the history of civilized man is traced back through medieval Europe, the Byzantine and the Roman empires, the Hellenistic period, and the ancient Greek period, the trail leads directly to the empires and the cultures which arose in the two great alluvial valleys, Mesopotamia and Egypt. Whether it is in Egypt or Mesopotamia that the earliest documents have been found is of secondary importance. No decisive evidence has been adduced of any influence of the one on the other during the early formative period of either; but the cultural influence of both on the ancient nations about the Mediterranean is clearly proved. It has been the joint work of philologists and archaeologists to carry the history of these two countries back in a reliable chronological series to about B.C. 1700, and beyond that date to a dim past which may be safely estimated at B.C. 5000-4000.

Both of the ancient lands which formed the breeding-ground for the creators of the earliest civilizations were alluvial valleys presenting the largest and the richest agricultural areas of the ancient world. On either side of Egypt lay arid regions inhabited by desert nomads eking out a scanty living by means of domestic animals, grazed on the sparsely growing vegetation

of the desert and yielding milk and hair. The desert nomad is, and always has been, a lean milk-fed man, caught in a merciless struggle for existence, prevented by circumstances, if not by race, from making any advance towards civilization. On the west of Babylonia lies an arid region, on the east a mountainous district only relatively better fitted for the rise of a native culture. But in the two valleys the yield of the rich soil was such that one man's labor would raise sufficient foodstuffs to supply several families; and leisure was thus found by part of the population to engage in handicrafts and in trade, to plan a more comfortable existence and devise means of obtaining it. In other words, it was agriculture which enabled man to take the first step towards the utilization of the resources of the earth—the attainment of power over its hard material which was to lead to the increasing control over time and space which marks our own age.

All archaeological material may be divided into two great classes: those objects which are inscribed and those which are not. In both Egypt and Mesopotamia the material available in the early days of research consisted almost exclusively of inscriptions. The first great difficulty was the decipherment of the hieroglyphic writing of Egypt and the cuneiform writing of Babylonia, and the recovery of the two very different languages. Once the decipherment was accomplished, the translation of inscriptions began, and the utilization of their contents for the writing of history followed. Field-archaeology in those days was devoted largely to a search for inscriptions, and secondarily to the recovery not of historical evidence, but of curiosities—statues, reliefs, coffins, mummies, jewelry—for museums and private collectors. It is only since about 1880 that scientific field-archaeology has developed, and it has taken a very different course in the two valley lands.

In Babylonia the climatic conditions and other harassing difficulties have been so unfavorable that comparatively few expeditions could succeed in working continuously through long periods of time: the early British expeditions to Babylon and Nineveh, the Pennsylvania expedition to Nippur, that of Edgar

J. Banks to Mugheir, and that of the German Oriental Society preceding the World War. Since the land has become a mandated territory under the protection of Great Britain, two joint Anglo-American expeditions have been steadily active, both under archaeologists originally trained in Egypt.

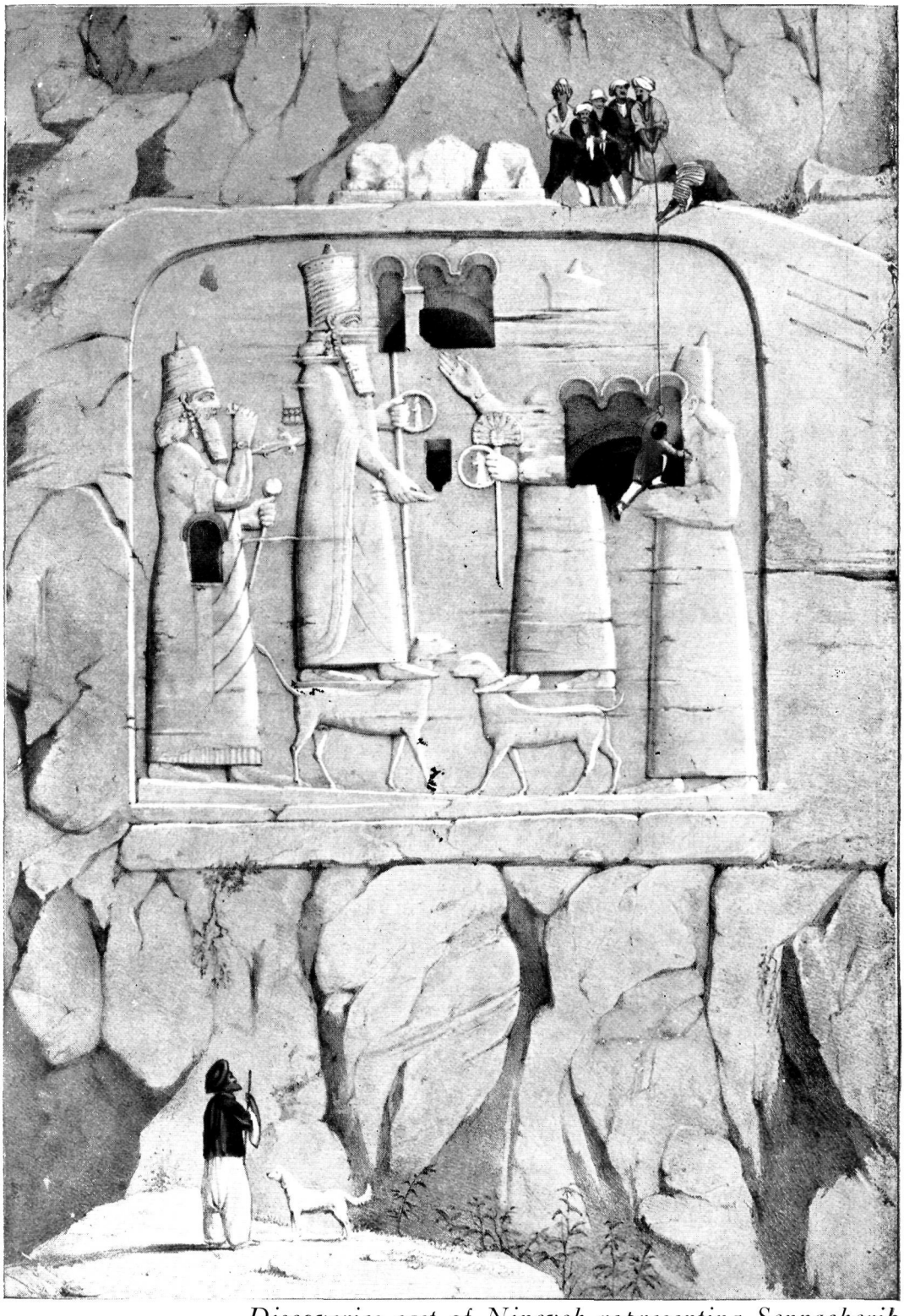
In Egypt, on the contrary, the pleasant winter weather, the proximity to Europe, and the enlightened policy of Mohammed Ali Pasha and his descendants, the rulers of Egypt, have all promoted archaeological research. Egypt's official Service of Antiquities was founded in 1858, with a French scholar, A. E. Mariette, at the head; but it was not until Mariette was succeeded by another, a greater French scholar, Gaston Maspero, in 1880, that the policy was introduced of giving the excavator one-half of his finds. It was this policy which drew archaeological expeditions to Egypt. Immediately before the World War there were seven important foreign expeditions, amply provided with funds, working year after year in Egypt—two American, two British, one French, one German, and one Austrian. The Egyptian government through its department of antiquities was also carrying on excavations at several places under European archaeologists. As a result of the co-operation and the mutual criticism of all these expeditions, and of Maspero's tendency to favor scientific work, methods of research in Egypt were developed to a point beyond those practised in other fields.

Another great point of difference between work in Mesopotamia and that in Egypt has been the character of the remains under examination. In Mesopotamia the excavations have been confined to city mounds far more difficult to excavate properly and yielding comparatively few of the common objects used in daily life. In Egypt city mounds and many great temples have been excavated; but the greater part of the work has been in the tombs of kings and nobles and in the graves of the common people. In the dry climate of the Nile valley, wood and cloth, and even the organic tissues of the body, are often wonderfully preserved. Thus in Egypt a great mass of archaeological evidence has been added to that of inscriptions

and become available for the reconstruction of history. In Babylonia research up to the present has been practically limited to the interpretation of inscriptions, and the history has not been carried back beyond the introduction of writing. But in Egypt the utilization of the archaeological material has enabled us to trace the development of the Egyptians' civilization from a late neolithic state down to the culmination of their culture in the pyramid age, and on through all changes practically to the present time. The last generation in archaeological research has won high distinction in the Egyptian field; the next generation promises to give us a comparable discovery of the cultural history of pre-dynastic Babylonia.

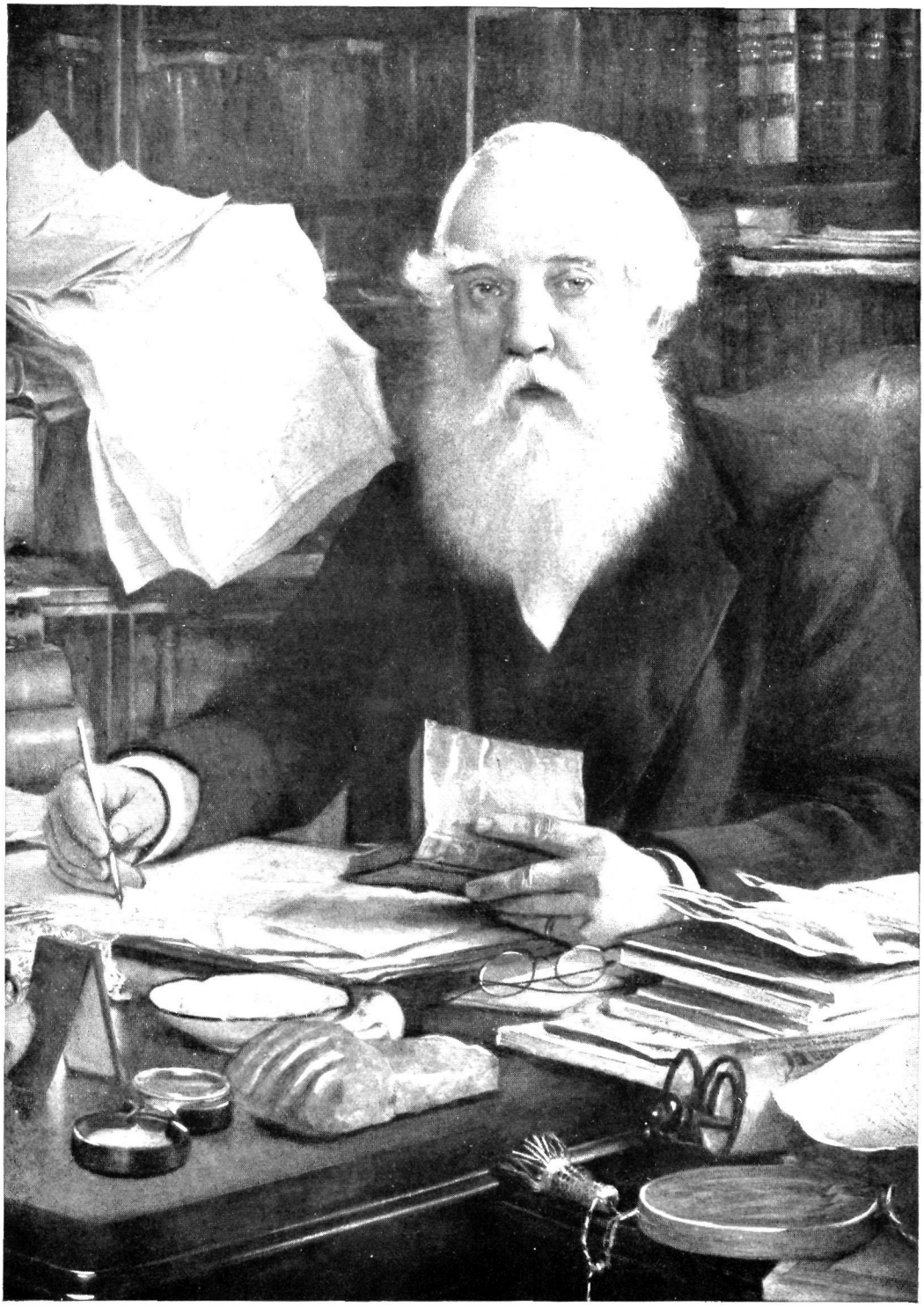
In Babylonia palaces and temples of Babylon and Nineveh have been excavated, and similar structures at a number of ancient southern cities. The foundation-tablets and cylinders of many kings have been added to the European and the American collections, together with contract-tablets, letters both private and official, the accounts of the temple administrations, codes of laws, dictionaries, lists of kings, and royal archives with copies of the chief literary productions of the Babylonians. The written material is abundant and continues to increase, so that the historian has been enabled to reconstruct with growing certainty the political and the cultural history from the time of the invention of the cuneiform script.

The more ancient history is obscure, but our first view of the land shows a primitive civilization built up by a race we call Sumerian—with organized monarchies, writing, and a system of measuring time by means of lists of the reigns of the kings, in which each year was named after some important event. Evidence has been found that later the Semitic tribes on the western and the south-western borders penetrated the country, overcame the Sumerian rulers, and absorbed the cultural elements of their civilization. In particular they adapted the cuneiform writing to the needs of the Semitic language; our knowledge of the Sumerian is largely drawn from the Sumero-Semitic dictionaries prepared by the scribes, and from the Sumerian hymns and magical texts with interlinear Semitic



Discoveries east of Nineveh representing Sennacherib

HENRY LAYARD'S METHOD OF EXAMINING ASSYRIAN ROCK SCULPTURES



HENRY LAYARD

translations. The political and the religious history of later times, the manners and customs of the people, are as fully known as it is possible for written words to reveal them. The main fact is that about B.C. 2000 a highly organized and civilized State had been built up in Mesopotamia, and that this State was about to enter on a career of foreign conquest which was to make Babylonia, and then its Assyrian colony, one of the two dominant cultural agents in western Asia.

In Egypt the inscriptions have not been so numerous as in Babylonia, but they have contained richer material. A great series of funerary texts have been recovered—the pyramid texts, the Middle Empire coffin texts, and the various recensions of the Book of the Dead. Likewise the offering formulas attached to the false doors are peculiarly Egyptian, and to these must be added the biographies of the dead carved on the walls of the offering-chapels and the scenes from daily life with their explanatory inscriptions. But most important of all, the historian of Egypt has been furnished with a vast amount of archaeological material recovered from the tombs, material which is lacking in Babylonia. Graves of the common people of Egypt have been excavated representing in practically continuous succession all periods from the neolithic period to Christian times, and a remarkable number of tombs of kings, queens, and nobles. Almost all the tombs of great men had been plundered for gold, and many of the tombs of lesser men. But some of the original furniture has been obtained in almost every case. The tomb of Menes, the first king of Dynasty I, who thirty years ago still seemed a mythical character, has been excavated by J. DeMorgan and its contents placed in the Cairo Museum. So also the tombs of the remaining seven kings of that distant dynasty and two of the Second Dynasty have been identified by Professor Flinders Petrie and their contents placed in museums.

The two pyramids of Dynasty III at Zawiat-el-Aryan were excavated—the finished pyramid by the Harvard-Boston expedition, and the unfinished pyramid by M. Barsanti for the Egyptian government. Another and greater pyramid, that of

King Zoser of Dynasty III, the "Step Pyramid" of Saqqarah, was identified early in the last century, and in 1924-1925 C. M. Firth was uncovering the "Beautiful Temple of Zoser" attached to that pyramid, executed by the first builder in dressed stone, the great architect Imhotep. The beautiful limestone masonry of its walls, the fluted columns, the papyrus and lotus columns, and the other architectural details have revolutionized our knowledge of the history of Egyptian architecture.

The pyramids and the royal cemeteries of Dynasty IV at Medum, Giza, and Abu Roash, with their temples, their statuary, their painted reliefs, their pottery and other objects, have been recovered by excavations; and now, in addition to the portraits of Zoser and Khasekhem of Dynasty III, the world possesses fourteen reproductions in stone of the kings of Dynasty IV, and at least sixteen of members of the royal family and the court of that time. Most of the royal pyramids of Dynasty V and Dynasty VI have been identified; and in the great cemeteries of Giza, Abu Sir, and Saqqarah a considerable number of tombs of the princes and nobles of the Old Kingdom have also been recovered. The tombs of many kings of the Middle and the New kingdoms—among them the tomb of King Tutankhamen, the only tomb of an Egyptian king ever discovered intact—have yielded the remains of their contents to human knowledge. Most of the tombs of the sovereigns of Dynasties XXIII to XXVI remain unidentified; but the pyramids found and excavated in a distant sunburnt village in Ethiopia, at the foot of the Fourth Cataract, by the Harvard-Boston expedition proved to be the pyramids of the kings of the Egyptian Dynasty XXV. Altogether that expedition has cleared the pyramids of sixty-eight kings and regnant queens of Ethiopia, which was, from the time of the Old Kingdom down to the Christian era, intimately connected with Egypt.

The graves of neolithic man of a period which may be vaguely but in good faith set at about B.C. 5000 plus or minus 500 years have been uncovered in Egypt, as have other graves in a continuous series down to the time of Menes, the traditional first king of Dynasty I (B.C. 3700 plus or minus 300

years). The outstanding historic event recorded by the archaeological material of the pre-dynastic period in Egypt is the introduction, about the middle of that period, of the practical use of metal, and the resulting development of the arts and crafts and of the political organization. The metal has been frequently analyzed, and the analyses seem to show that down even to the Old Kingdom it was soft copper. But the tools of the Old Kingdom were certainly used to cut limestone, so that they could not have been tools of soft copper. It has, therefore, been concluded that some chemical or physical change has taken place during the thousands of years since then and that the modern analyses do not accurately represent the ancient consistency of this metal. The hardening may have been due either to some alloy present in small quantities, or to an abnormal state of crystallization caused by hammering the metal when slowly cooling. Chemists and physicists admit that the alloy may have oxidized out in the course of thousands of years, or that an abnormal state of crystallization may have relaxed to the normal soft state. Whichever explanation is the true one, the ancient weapons, tools, and implements must have been of hardened copper.

Within a few hundred years following the introduction of the practical use of copper Egypt was united as a political unit under Menes, and the whole of the surplus production of the country was placed practically at the disposition of one man. The present writer attributes the great development of the arts and crafts, the invention of two of the earliest machines, and the creation of the mud-brick architecture with its wooden accessories to the unequal distribution of wealth which began under Menes and continued to the end of the pyramid age. The bow-drill was probably already in use; in the time of Menes the weighted stone-borer was invented for boring holes in stone and utilized for the manufacture of stone vessels; about the end of Dynasty II the potter's wheel came into use. In Dynasty III the mud-brick architecture was translated into limestone, and in Dynasties IV and V the use of granite and basalt as building stones was added to the use of limestone. During the

same dynasties sculpture in the round and in relief was brought to its climax. The pyramids with their great temples and rich equipments were built; and the royal workshops became schools of architecture, sculpture, and of all the arts and crafts. From these schools the advances made by the creative masters imparted an influence distributed more or less imperfectly throughout the whole of the cultural area of Egypt.

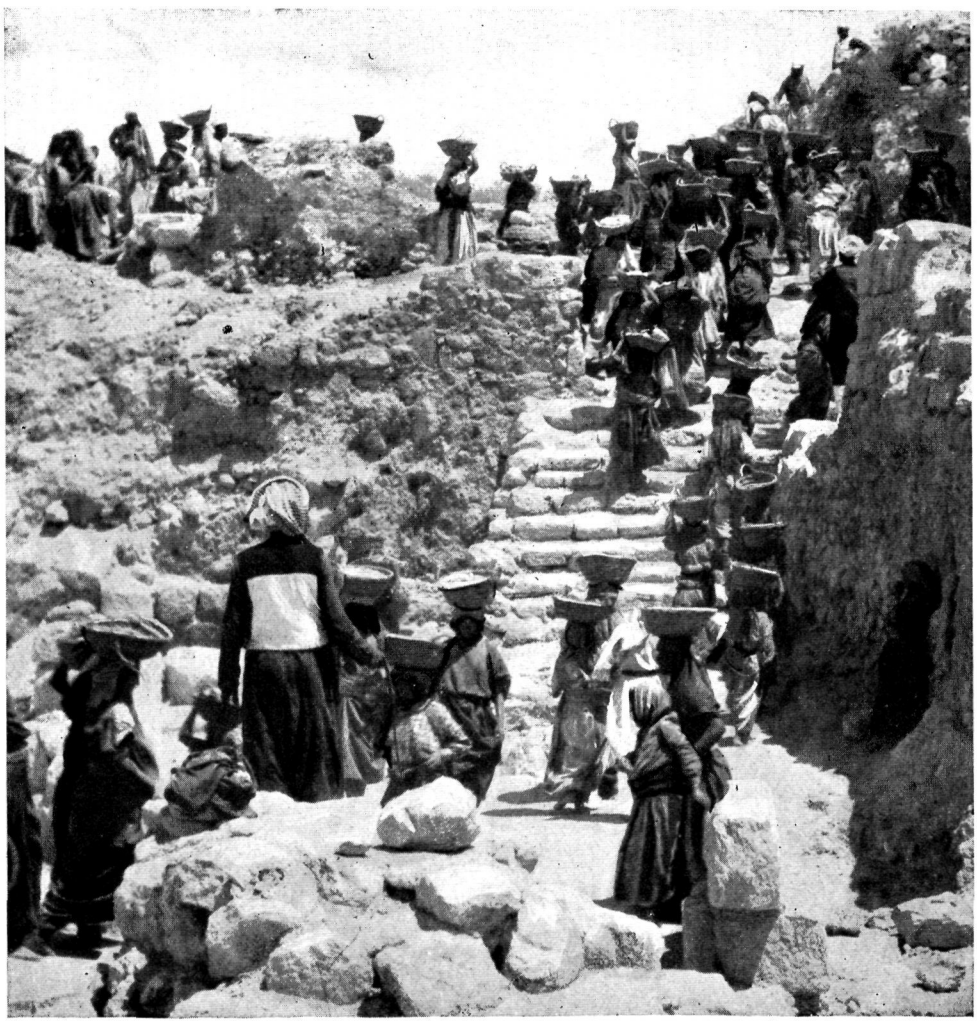
Thus the archaeologists and the philologists together have unravelled the main outlines of the growth of the two civilizations which arose in Mesopotamia and Egypt. About B. C. 2000 the Babylonians, and about B.C. 1600 the Egyptians, embarked on their careers of foreign conquest. In both cases the motive was the appropriation of the accumulated wealth and of the annual surplus of the other nations of western Asia. The consequence was the spread of the elements of both cultures into the civilization of the peoples who lived about the eastern end of the Mediterranean and in the Greek islands. The punitive measures adopted by the Assyrians for subduing their rebellious subjects shifted a number of smaller populations from their native lands to other districts or to Babylonia. A knowledge of the cuneiform script and the Babylonian language was spread westward and reached even Egypt. Several of the minor nations adapted the script to the needs of their own languages. But it was apparently the Egyptian hieratic writing (an abridged form of hieroglyphic) which was utilized as the basis of the alphabetic writing of the western Semites, to be passed on to the Greeks and so to Europe.

During the last seventy years archaeological research has been the serious life-work of scholars drawn from many nations. Field-work, in particular, has been organized so that it involves steady and ceaseless labor in the systematic recording of the discovery and observation of historical evidence. Our gain is a knowledge of the development of the civilizations of these older nations, and an understanding of the conditions of the ancient world at the time when younger people began the careers which were to lead men further on the road towards our modern culture.

The new building and tower of observatory

THE SORBONNE, PARIS

SCULPTURED SARCOPHAGUS FOUND NEAR CAESAREA



EXCAVATING IN PALESTINE