

THE UNIVERSITY OF CHICAGO SURVEY
VOLUME XII

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THE UNIVERSITY OF CHICAGO SURVEY

- I. TRENDS IN UNIVERSITY GROWTH
- II. THE ORGANIZATION AND ADMINISTRATION OF THE UNIVERSITY
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THE ORIENTAL INSTITUTE

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From a painting by Nina de Garis Davies

AN EGYPTIAN NOBLE AND HIS FAMILY HUNTING IN THE MARSHES. WALL
SCENE IN A TOMB NEAR LUXOR, FIFTEENTH CENTURY B.C.

The University of Chicago Survey • *Volume XII*

THE ORIENTAL INSTITUTE

JAMES HENRY BREASTED
Director



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FOREWORD

In 1923 the General Education Board of New York City granted funds to the University of Chicago for the making of a survey of the institution; later the gift was supplemented by a second grant. On recommendation of Acting President Woodward in February, 1929, Floyd W. Reeves was appointed as professor of education and Director of the University Survey. Work on the survey was begun October 1, 1929, and has been carried on continuously since that date.

The entire scope of the survey embraces some forty or fifty projects, which are being grouped for purposes of publication into a series of volumes. This report on *The Oriental Institute* is Volume XII of the series. The titles in the series are announced on page ii of this publication.

A comprehensive survey of a large research enterprise is a new undertaking in educational administration. So far as the writer is aware, no model exists by which such a survey may be planned. In the present instance it was fortunately possible to arrange with Dr. Breasted to undertake the making of this survey of the Oriental Institute. The reader who is acquainted with the field of oriental research will recognize at once the uniqueness of Dr. Breasted's qualifications for the making of such a survey. In planning the study the Director of the University Survey made a few suggestions regarding the general scope of topics to be covered, but these were only suggestions, and Dr. Breasted, the author of the volume, has been left entirely free to work out the plan for this part of the University survey as it seemed best to him.

This is a document for which no apologies are needed. Students of educational literature who are familiar with published survey reports will find it distinctly different from anything that they have previously encountered under the title of a survey. At the same

FOREWORD

time it must be remembered that this is a pioneer attempt at surveying this type of research organization. It is to be hoped that this extremely interesting document may induce other large research enterprises to make corresponding analyses of their activities.

FLOYD W. REEVES, *Director University Survey*

February 7, 1933

PREFACE

In issuing this sketch, intended to explain the purpose and character of the Oriental Institute, I would like to indicate to my fellow-orientalists that this volume is part of a comprehensive survey of the University of Chicago in twelve volumes. The requirements of that survey have therefore dictated the character and the content of the volume. The typical reader to whom the book is addressed has necessarily been the student of education—that is to say, as far as oriental science is concerned, essentially the average intelligent layman. The book therefore contains much which is superfluous for the professional orientalist and to which he need give no attention. While the discussions, the accounts of the various expeditions, and the surveys of the Oriental Institute's research projects are not intended to be scientific reports, they nevertheless contain a body of new facts with which the modern orientalist will wish to be acquainted.

The most important general fact involved in these new observations is without doubt the scope, character, and purpose of the Oriental Institute itself. The responsibility of making the Institute intelligible as a scientific agency has been the most difficult as well as the most important objective of these chapters. The Institute is essentially an organized endeavor to *recover the lost story of the rise of man* by salvaging the surviving evidence on a more comprehensive scale than has hitherto been possible and then by analysis and synthesis building up an account of human development on a broader basis of evidence than has heretofore been available.

Such an effort was in the first instance financial. However indispensable and important the financial basis has been, nearly all the facts regarding this aspect of the foundation and development of the Institute have nevertheless been omitted as of secondary importance.

It has been the author's purpose to acknowledge in the text such portions of the book as are drawn from reports of the field direc-

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tors and other members of the Institute staffs; but he would here express his thanks for their invaluable co-operation which has made the volume possible.

The author would also acknowledge with gratitude his substantial indebtedness to Dr. Allen and the staff of the Institute's editorial office in the final editorial revision of the text of the volume.

JAMES HENRY BREASTED

THE ORIENTAL INSTITUTE
CHICAGO

January 19, 1933

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CHAPTER I

THE TASK OF THE ORIENTALIST AND ITS PLACE IN SCIENCE AND HISTORY

For ages Man has seen himself against a background of nature. The profoundest minds have struggled with the problem of man's place in nature. The self-development which was the deepest current in the growth of Goethe's mind was conditioned by an expanding consciousness of his own kinship with nature and the belief that somehow man had come out of it. These thoughts eventually issued in Goethe's profound conviction of his spiritual oneness with nature. A quarter of a century after Goethe died Darwin published his *Origin of Species*, and thereupon the conception of man's place in nature hardened until little was discerned beyond the mechanical and largely biological aspects of the emergence of man. It was especially in the writings of such men as the Frenchman Taine that these mechanistic and biological conceptions revealed their devastating effect upon a trained mind even though enriched by literary culture. Nevertheless Taine was aware that the evolutionary process had somehow issued in social idealism. In one of his letters he wrote: "I love history because it shows me the birth and progress of justice; and I find it all the more beautiful in that I see in it the ultimate development of nature." There is therefore no reason why, under the light of modern science and its terrifying revelations, man should fear the tremendous idea that he is an outgrowth of a universe that holds him in its immutable grasp.

As the natural scientists have labored on, the physical origin of man from lower animals has become far clearer. But between the historians and the natural scientists there has been a "great gulf set," with the result that we now have on the one hand the paleontologist with his picture of the dawn-man enveloped in clouds of archaic savagery, and on the other hand the historian with his reconstruction of the career of civilized man in Europe. Between

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these two stand we orientalists endeavoring to bridge the gap. It is in that gap that man's primitive advance passed from merely physical evolution to an evolution of his soul, a social and spiritual development which transcends the merely biological and divests evolution of its terrors. It is the recovery of these lost stages, the bridging of this chasm between the merely physical man and the ethical, intellectual man, which is a fundamental need of man's soul as he faces nature today. We can build this bridge only as we study the emergence and early history of the first great civilized societies in the ancient Near East, for *there* still lies the evidence out of which we may recover the story of the origins and the early advance of civilization, out of which European culture and eventually our own civilization came forth. *The task of salvaging and studying this evidence and of recovering the story which it reveals—that is the greatest task of the humanist today.*¹

It is a task which demands in the first place sufficient funds for the organization of a group of efficient and scientific field expeditions including men with practical archeological training who can be associated with the home staff of philologists and historians forming the University's Department of Oriental Languages. The field staffs and the University Department at home can then cooperate in a far-reaching twofold process: first, the task of salvaging the vast body of evidence still surviving in the field; and second, the task of studying, interpreting, and correlating that evidence as it is received from the field by the scientific staff at home. Thus the otherwise more or less helpless University Department of Oriental Languages becomes part of an effective organization, in which it serves as the interpretative organ. We thus link together the far-flung salvaging operations in the field and the interpretative group at home in one great co-operative organization.

This organization of home and field staffs, which we have called the Oriental Institute, began its work in the autumn of 1919, and is therefore thirteen years old.

How did man become what he is? That is really the question which the Oriental Institute has been organized to study. The In-

¹ The above paragraphs are derived from the author's address at the dedication of the Oriental Institute Building in Chicago, December 5, 1931.

stitute is therefore a research laboratory for the investigation of the early human career. It endeavors to trace the course of human development from the merely physical man disclosed by the paleontologist to the rise and early advance of civilized societies, the product of a social and material evolution culminating in social idealism.

A generation of archeological research has dispelled all doubts as to the scene of this evolution, which is now recognized as having been the ancient Near East, the region folded like a horseshoe around the eastern end of the Mediterranean. The ancient lands of this region today constitute an almost inexhaustible storehouse filled with perishing and still unsalvaged evidences disclosing early human development. Heretofore no comprehensive and systematic effort has been made to save and study *as a whole* these enormous bodies of perishing evidence.²

THE POSITION OF THE NEAR EAST IN THE RISE OF MAN

The responsibility of modern orientalists as students of ancient man is in direct ratio to the importance of early oriental civilization in the history of mankind viewed *as a whole*. It has long seemed to the writer that the commanding position of the lands of the Near East in the career of man has been obscured by failure to view them in a deep and broad perspective of world history. It is only as we look far abroad, over many other social groups, that we can properly discern the genetic position of the cultures of the Near East; and we find them unexpectedly intelligible and surprisingly illuminated by the study of analogous situations elsewhere.

It is now evident that there are only two regions on the globe in which man has *independently* risen from Stone Age savagery to the possession of agriculture, metals, and writing. The independence of these two regions in making these cultural conquests has been conclusively demonstrated. They are geographically widely separated. One of them is in the New World and the other in the Old; and

² The last two paragraphs are largely quoted from the writer's statement in the Institute's handbook, *The Oriental Institute of the University of Chicago* (1931), p. 1. The remainder of this chapter draws largely from the author's presidential address before the American Oriental Society at Philadelphia in April, 1919, published in its *Journal*, XXXIX (1919), 159-84.

each of them lies along, or on both sides of, a great intercontinental bridge, one joining the two Americas, the other connecting Africa and Eurasia.

An examination of the culture situation of the Western world as a whole in pre-Columbian times is very instructive. In making a comprehensive reconstruction of the career of man in the New World³ the Americanists have enjoyed enviable freedom from traditional prejudices like those of the old-school classicists, who felt it sacrilege to acknowledge the share of the Orient in the history of civilization, or those of the Egyptologists and Assyriologists, who are often more interested in proving the shores of the Nile or of the Euphrates to have been the oldest home of civilization than in establishing the *facts*, whatever the result. To the Americanist it is evident that a culture trait of some complexity, such as the cultivation of maize, when it is found *continuously* distributed over a wide area, has been so distributed by a process of diffusion from a common center, and that under such circumstances we cannot assume independent invention.⁴ Without any preconceptions or inherited prejudices he may then proceed to find the center of diffusion for each such cultural conquest. If he finds the lines of diffusion of the most important culture traits persistently converging on the same center, he concludes that this focus was the original home of civilization in the New World. By this process he has shown that maize has descended from a wild grass in the Maya region of Yucatan,⁵ whence it passed far across both continents from one hunting tribe to another as far as the habitat of each tribe permitted. Similarly the whole cotton complex, including the loom and upward weaving, spread from the middle region of America both northward and

³ An admirable reconstruction of this kind has been put together in an exceedingly useful book by Clark Wissler, *The American Indian* (New York, 1917), to which the above summary is much indebted.

⁴ Wissler, *op. cit.*, p. 343, and E. Sapir, *Time Perspective in Aboriginal American Culture* (Ottawa, 1916), pp. 25-36.

⁵ See Wissler, *op. cit.*, pp. 27-28, who cites J. W. Harshberger, *Maize: a Botanical and Economic Study* (University of Pennsylvania, Botanical Laboratory, Contributions, Vol. I, No. 2 [Philadelphia, 1893]), and G. N. Collins, "Pueblo Indian Maize Breeding," *Journal of Heredity*, V (1914), 255-68.

southward.⁶ According to Wissler, "the distribution of pottery was still in progress at the opening of the period of discovery" by European explorers in North America, and the inference is a fair one "that it was distributed from the South";⁷ for, as he remarks, "as we know that maize came up from the South, it is reasonable to suppose that pottery came by the same road."⁸ Similarly it was only the peoples on and around the intercontinental bridge who developed metallurgy, or who possessed the social and administrative organization to practice irrigation on a remarkably extensive scale. Many of the characteristics of the elaborate ritualism of the New World likewise spread from the middle region, especially from the Maya and Inca centers.⁹ In the central region also we find the only writing, just in course of transition from the pictographic to the phonetic stage. It spread northward into Mexico, but did not penetrate into South America, which never possessed writing. Here then we find disclosed in the Western world a nucleus of civilization occupying the middle region of the two continents—a nucleus which led the cultural development of the entire Western Hemisphere.

The lack of writing throughout most of the territory of the New World has saved the Americanists from the regrettable narrowness, limitations, and often pedantry of the old-time philologist. To be sure, linguistic documents available in modern copies, transcripts, and treatises, besides the original inscriptions, have furnished the Americanists with an insurmountable mass of materials for philological investigation of the New World, and there have been sharp rivalries here between the linguist, the archeologist, the ethnologist, and the physical anthropologist. All these lines of investigation, therefore, and many others, have been indefatigably pursued, and an enormous body of observations and results representing them all has been built up by our Americanists. Nor have these results been kept in water-tight compartments, but the whole body of evidence, from whatever source or of whatever character, has been brought to bear on the career of man in the New World.

⁶ Wissler, *op. cit.*, pp. 49-59.

⁸ *Ibid.*, p. 69.

⁷ *Ibid.*, p. 67.

⁹ *Ibid.*, p. 190.

Turning from a situation like this, embracing both the continents of the Western Hemisphere, we may apply its lessons very instructively to the Old World. For the Old World is itself made up of two continents, Africa and Eurasia; and, as we have already remarked, the earliest civilizations arose and spread on both sides of the intercontinental bridge between them. That the same processes of diffusion, across and on both sides of the bridge, which the Americanist finds in the *New World* were going on for thousands of years in the *Old World*, no one can doubt.

Grouped about the Old World intercontinental bridge from the Nile to the Euphrates we have a nucleus of cultures which after 4000 B.C. had reached about the same point of advancement as that attained in A.D. 1492 by the New World group in an analogous situation. Each group in its respective situation was the sole nucleus of civilization, and was superior to the less advanced cultures stretching far across the great outlying continental areas. The diffusion of culture from the New World group northward and southward across both continents, continuing as it did down into our own times, is like a laboratory experiment in human experience, set going for the benefit of us orientalists and demonstrating to us what must have been going on around the Egypto-Babylonian group for thousands of years before the age of written documents. This conclusion is confirmed as we examine the relation of the Egypto-Babylonian group to prehistoric man round about it.

Elsewhere, throughout the great prehistoric world of Africa and Eurasia, there was no culture higher than that of the savage or barbarous Neolithic hunting peoples, like those of the American continents on both sides of the central culture-nucleus. It is true that an enormous amount of detailed research remains to be done in the study of man's career in the Eastern Hemisphere, but enough has already been accomplished to reveal the general situation. Long after the Egypto-Babylonian group at the nexus of the two continents had gained metal, writing, and highly developed government, the surrounding peoples far back into Africa and Eurasia had not yet gained these fundamental elements of civilization and were still in a primitive stage of culture development. As we move out from the Egypto-Babylonian group the culture level declines and

civilization fades and disappears. The chief exception is the remarkable agricultural civilization recently discovered in the lower Indus Valley, which has been shown to be closely related to the Egypto-Babylonian complex and without doubt developed under influences from this source. The date of this prehistoric East Indian civilization has recently been established by the Oriental Institute's Iraq Expedition (see p. 353).

The only other center of culture which might be compared in age with the Egypto-Babylonian group is China. Regarding the age of Chinese culture, however, there is wide misapprehension. The oldest *contemporary* annals of China, written on wood and bamboo, date from the second century B.C.; and the shamanistic texts on bone, the oldest writings discovered in China, are dated by Laufer, as he has kindly informed me, in the second millennium B.C. The oldest dated specimens of bronze made by the Chinese belong in the latter part of the second millennium; not one is safely datable earlier than the thirteenth century B.C. China's remarkable list of civilized contributions to the Western world is very late. This is well illustrated by China's splendid gift of porcelain to the nations of the West after the development of modern sea trade with Chinese ports. The production of porcelain was an art which grew out of a knowledge not only of pottery but also of glass and glaze. The latter arose in Egypt as early as the thirty-fifth century B.C. and, spreading rather slowly to Western Asia, did not reach China until Hellenistic times, "in the second century B.C. or earlier."¹⁰ The evidence all points to the conclusion that Chinese culture developed immensely later than that of the Egypto-Babylonian group, and there are no competent Sinologists who would dissent from this conclusion. While it is evident that China passed through a long development in detachment from the Western Asiatic world, nevertheless, as Laufer has well stated, "the conviction is gaining ground . . . that Chinese culture in its material and economic foundation has a common root with our own."¹¹ He would place this common

¹⁰ B. Laufer, *The Beginnings of Porcelain in China* (Field Museum of Natural History, Publication No. 192 [Chicago, 1917]), p. 139.

¹¹ *Journal of Race Development*, V (1914-15), 167-70.

source somewhere in Western Asia, without venturing to mention any particular geographical region. For myself I cannot doubt where this western source is to be placed. We must find it in the Egypto-Babylonian group; for the excavations in the regions of Asia surrounding this group, in Asia Minor, Turkestan, and Elam (Persia), have disclosed very clearly the later and inferior character of the cultures there and the direction of the culture drift, although the excessively early and totally ungrounded chronology set up by De Morgan and Pumpelly has obscured the real situation and misled many.¹²

It is therefore quite possible to indicate in very general terms the relation of the Egypto-Babylonian group to the vast undeveloped prehistoric world of savagery and barbarism which in the fourth and fifth millenniums B.C. extended from the Atlantic across Africa and Eurasia to the Indian and Pacific Oceans. In the midst of this far-reaching wilderness of primitive life there was a single oasis of advanced culture from which the forces of civilization gradually diffused a higher type of life among the surrounding peoples. The movement of such influences and the detachment of the group which eventually carried agriculture and cattle-breeding into China lie so far back in the prehistoric age that the practices of milking and of weaving wool had not yet developed.¹³ Of such movements we shall never learn very much. On the other hand, the process of diffusion continued far down into the historic age, and much of it therefore took place almost under our eyes.

This recognition of the earlier human background, now so obvious to us, did not come all at once, for the inclusion of history itself in university instruction is an event less than two centuries old. The man who first gave history a recognized place in science was an *ancient historian*. It was Berthold Niebuhr who first grasped the fundamentals of Roman history in terms of human life as he found it all around him little more than a century ago. In his studies of the course of Roman affairs he was the first to investigate

¹² See F. Thureau-Dangin, *La chronologie des dynasties de Sumer et d'Accad* (Paris, 1918). But cf. now also H. Frankfort, *Archeology and the Sumerian Problem* ("Studies in Ancient Oriental Civilization," No. 4 [Chicago, 1932]).

¹³ Laufer, *Journal of Race Development*, *loc. cit.*

with sound methods the career of a people. It is these methods of an ancient historian, clarified and improved as time went on, which have lifted history to its present recognized place among modern sciences. It is perhaps no accident that Berthold Niebuhr's father, Carsten Niebuhr, was an orientalist and an explorer of the ancient lands of the East. Associated with such studies from his earliest childhood, the younger Niebuhr's imagination was kindled by the tales his father told him of the older lands lying behind Greece and Rome. We are therefore able to understand that in 1829, only seven years after the decipherment of Egyptian by Champollion and twenty years before the decipherment of cuneiform writing by Rawlinson, Berthold Niebuhr ventured a prophecy that Nineveh would arise as the Pompeii of Western Asia, and that Assyrian civilization would not lack its Champollion. Thus it happened that in the hands of a specialist in *ancient history*, and furthermore in the closest contact with ancient *oriental history*, the modern study of history was first developed as a methodically pursued scientific discipline.

It is the more remarkable, therefore, that in 1880, over half a century later, when undertaking his universal history, Ranke regarded the origins of society as no longer recoverable and the civilizations of the ancient Near East as wholly unconnected with the main stream of history. Only twenty years later, just at the close of the nineteenth century, Sir Arthur Evans began his epoch-making researches in Crete, which revealed early Cretan culture as the vital link between the civilization of Egypt and that of Southeastern Europe. Evans himself recognized the fact in these memorable words: "Ancient Egypt itself can no longer be regarded as something apart from general human history."¹⁴ While this was true of Egypt, it has now become equally true of Western Asia, especially of ancient Babylonia and Assyria. In the intercontinental region enfolding the eastern end of the Mediterranean a group of civilized nations developed for ages before the rise of European culture and formed the earliest known civilized world. On the borders of this

¹⁴ In his presidential address before the British Association for the Advancement of Science, Newcastle-on-Tyne, 1916, reprinted in *Annual Report . . . of the Smithsonian Institution for 1915/16* (Washington, 1917), pp. 425-45; see p. 442.

earliest civilized world of Egypt and Western Asia lay for some two thousand years the wilderness of savage Europe, stretching far westward to the Atlantic, untouched by civilization except at its southeastern corner, where the Greek islands looked southeastward to the mouths of the Nile and eastward toward Hittite Asia Minor. The fruits of thousands of years of human experience, garnered in the ancient Near East, thus passed easily and inevitably into the European wilderness. Today it is easy to survey in its main outlines the gradual emergence of Europe from prehistoric savagery as the light of civilization, dawning slowly in the southeast, after 3000 B.C. passed gradually westward across all Europe, till its further westward advance was halted for many centuries by the broad barrier of the Atlantic.¹⁵

Much of the culture drift from the Egypto-Babylonian group Asiaward also took place in the full light of the historic age. This is far too large a subject to be discussed here, but such obvious later examples as the borrowing of writing by the Iranians and East Indians, or the eastward expansion of the art of glazing, will occur to all. This whole question of the relation of the Egypto-Babylonian group to the surrounding culture in Asia is of fundamental importance. There is a great fringe of Asiatic peoples, often politically and *always* culturally dependent on the Egypto-Babylonian group, which we have hardly begun to investigate. Enough has been done, however, to demonstrate that the ancient civilizations of the Near East which we have called the Egypto-Babylonian group (including in this term the derived and dependent contiguous cultures) occupy a unique and commanding position as the earliest center of the diffusion of civilization in the long course of human development.

From these civilizations as our base we are able to push backward *up* the centuries and connect with the prehistoric stages which preceded civilization and developed into it; while in the other direction we may follow *down* the centuries from the civilizations of the Near

¹⁵ The two preceding paragraphs are quoted from "The New Crusade," the author's presidential address before the American Historical Association at Indianapolis, December 28, 1928; see *American Historical Review*, XXXIV (1928/29), 218-19.

East to the Neolithic barbarism of Europe, which was stimulated into civilized life by cultural influences from the farther shores of the Mediterranean. In this vast cultural synthesis, embracing the whole known career of man, the civilizations of the Near Orient are like the keystone of the arch, with prehistoric man on one side and civilized Europe on the other. We have thus articulated with the career of man as a whole the great nucleus of early civilizations around the intercontinental bridge. In so doing we discern this Egypto-Babylonian group not only as the culmination of an enormously long prehistoric development, but also as the stimulating force which set going and long continued to contribute to the secondary and still developing civilization of Europe.

The investigation of the various stages in the long course of the diffusion by which the Egypto-Babylonian group influenced the great world around it is still in its beginnings. Similarly, the course of the development within the group itself and the relation to each other of the two leading members of the group, Egypt and Babylonia, present a formidable series of problems almost untouched. The process of diffusion within the Egypto-Babylonian group, although retarded by Arabia's great expanse of desert thrust northward like a separating wedge between them, must have been going on from the remotest times. It is in dealing with this very problem that the current methods of oriental science have been characteristically exhibited.

THE WIDE RANGE OF THE EVIDENCE AND THE EARLIER EFFORTS TO DEAL WITH IT

The heavy burden of recovering and mastering the lost oriental languages has made orientalist chiefly philologists and verbalists, equipped to utilize *written* documents, but until recently a little perplexed and bewildered in the presence of other kinds of evidence. Our enormous philological task has led us to regard even the written documents rather as materials for building up the dictionary and grammar than as historical sources. With an equipment like this we bear the responsibility of investigating a vast complex of civilizations, each of which has left behind enormous bodies of evidence *not in written form*, to say nothing of still surviving and little

altered physical situations (the habitats environing these civilizations), all equally demanding investigation in many different and highly important respects. For example, the methods of the Americanists, which would have involved some attention to the difference between the flora and fauna of Asia and those of the Nile Valley, would have spared us Hommel's unhappy theory of the Asiatic origin of Egyptian writing. Although Hommel's method was fundamentally wrong, nevertheless he was assuming with propriety the process of diffusion among the members of the Egypto-Babylonian group. To trace this diffusion successfully, however, will first require what has not yet been done, namely, the thorough and systematic investigation *by itself* of each culture of the group, employing all the available evidence, of whatever nature it may be, which is still observable in the habitat of each culture, just as the Americanists have been doing for North and South America. Let us glance for a moment at the different lines of the highly diversified evidence.

The most obvious, of course, is *written evidence*. The recovery of the lost languages of the ancient Orient has been a task of such difficulty and such vast extent that orientalists have been obliged to devote their time and strength chiefly to the surviving written sources. Within these, as already stated, the work of building up the grammar and the dictionary, still incomplete, has absorbed the time and energy of a great number of able scholars. Not until 1931 was an exhaustive dictionary of ancient Egyptian brought to conclusion under German management, after consuming the labors of an international group since 1897. No such dictionary of cuneiform (Babylonian and Assyrian) yet exists; but, as we shall see, the Oriental Institute, with a staff and collaborators now totaling over thirty, has for ten years been engaged in compiling a dictionary based on all known cuneiform documents (see pp. 387-400). Under these circumstances it has not been possible for orientalists to undertake an organized and comprehensive attack on the problem of copying, publishing, and thus saving from destruction the enormous body of ancient records of the past that have come down to us in the old lands of the Near East. This is now the most pressing need in the whole range of study of the ancient world.

In so far as the records of ancient man were written on perishable materials, such as papyrus or parchment, the chances of their survival into modern times have been very slight. In corroboration of this statement we have only to recall that of the reputed half-million or more rolls which once filled the shelves of the Alexandrian library, the largest library of ancient times, not a single one has survived. It is a papyrus roll found lying in an Egyptian tomb, in the coffin beside the owner, which has shown us how such an old Greek book actually looked. The *earliest* writing of the Greeks was on clay tablets; and their word "write" (*γράφω*), therefore, at first really meant to "scratch," "carve," or "engrave." But even these more durable earliest writings of the Greeks have perished. After the introduction of papyrus paper and later of parchment, a Greek or Latin book had little chance of surviving through thousands of years. What has nevertheless survived from Greek and Roman literature is a small part of what once existed. When we turn to the Orient we find the same situation. The writings preserved to us in the Hebrew Old Testament are but a small fraction of the whole body of Hebrew literature which was once available. Cuneiform records fared better, because they were written on clay tablets. The baking which often followed made such tablets so hard and durable that comparatively enormous quantities of them have been preserved. The surviving papyrus writings of Egypt are likewise an insignificant fragment of the huge mass of such documents which once filled the scribal offices and libraries of the ancient Egyptian nobles and functionaries.

Throughout the ancient lands the most durable records produced were inscriptions on stone. Both the Greeks and the Romans have left us a very large body of such inscribed writings. In 1829, that is, over a century ago, the work of collecting Latin inscriptions was begun by the Germans in their "Römische Anstalt" in Rome, although earlier efforts in this direction go back to the famous Scaliger in the sixteenth and seventeenth centuries. It was especially the great Mommsen's dream of a complete collection of such records which resulted in the organization of an efficient staff of collaborators for the production of the *Corpus Inscriptionum Latinarum*. It is of the greatest importance to realize the fact that,

although Mommsen fully expected to see the completion of this impressive task in his own lifetime, the work is still under way a generation after his death, and that, *although it has been going on for more than a century, it is still incomplete*. A similar enterprise for saving the inscriptions of ancient Greece is likewise still unfinished.

In bulk the wall inscriptions of Egypt exceed those of all other ancient lands combined. The task of salvaging these records was heroically begun by Champollion in 1828. Since his death, a century ago,¹⁶ the great task has been continued only intermittently. Moreover, the older publications are inadequate, and such inscriptions as they record must all be copied over again and republished. We find ourselves, therefore, a century after the death of Champollion, with this colossal task still before us.¹⁷

Forbiddingly large as it is, the task of salvaging the written records is without doubt exceeded in extent by that of recovering and saving the purely material monuments of ancient civilization, with which *archeology* is chiefly concerned. The conscientious utilization of all archeological evidence is a matter of surprisingly recent date. One of the leading orientalist of Europe not so many years ago inspected a fine old Babylonian bronze statuette brought to him by an antiquity dealer and refused to purchase it for the museum under his charge, remarking, "There is no inscription on it." It gave its evidence in the realm of form, technique, craftsmanship, costume, weapons, and the like in a language with which he was not familiar.

As a matter of history, the archeologist has not received a very hospitable reception in the ranks of orientalists. One recalls the somewhat brusque notice served on prehistoric archeologists by Lepsius when they presumed to invade the Nile Valley and reported the presence of Stone Age man there. Similar was the sarcastic reception accorded Puchstein, a classical archeologist, forsooth, who, without any knowledge of Assyrian grammar, had the effrontery to invade the realm of Assyrian architecture, and the audacity to assume that he could understand architectural forms

¹⁶ In 1832.

¹⁷ See pp. 187-98.

even when they arose on the shores of the Tigris! If the archeologist is now finding himself somewhat more at home on the Nile than on the Tigris and Euphrates, that is in some measure due to the *rap-prochement* between classical archeologists and Egyptologists inevitably resulting from the disclosure of the intimate relationships between the Aegean and the Nile as revealed by the excavations in Crete. Nevertheless, even the preliminary special investigations in Egyptian archeology are still so largely lacking that there are few men who would now venture to write a handbook of the subject analogous to any one of a dozen on Greek archeology.

Among other lines of investigation quite as indispensable to a solution of our great problems as are archeological researches, a very important place belongs to *physical anthropology*. Much discredit has been thrown upon statistics of brachycephaly and dolichocephaly, and I have heard and read remarks calculated to discredit all work in physical anthropology. But such research need not be limited to craniometry; important additional criteria have been developed by physical anthropologists. Moreover, it should not be forgotten that even the problems of *culture* may be most unexpectedly illuminated by a series of human bodies, especially if they are well preserved, as in the Nile Valley (see Fig. 1). The earliest prehistoric graves of Egypt contain bodies which display the practice of circumcision, thus dating this custom in Egypt as far back as the fifth millennium B.C. and establishing that country as the original home of the practice.¹⁸ In the alimentary tracts of practically all of these earliest bodies of prehistoric Egypt, investigation has demonstrated the presence of barley, while about 10 per cent contain millet also.¹⁹ These are the earliest known examples of domesticated grains, and the point I wish to make here is that these significant discoveries in human culture were made on or in human bodies. Similarly such bodies offer our earliest materials for the study of the history of disease among civilized peoples, the rise of

¹⁸ G. Elliot Smith, *The Ancient Egyptians and Their Influence upon the Civilization of Europe* (London, 1911), p. 55.

¹⁹ F. Netolitzky, "Neue Funde prähistorischer Nahrungs- und Heilmittel," in *Xenia, Hommage international à l'université nationale de Grèce à l'occasion du soixante-quinzième anniversaire de sa fondation*, pp. 225 ff.

the practice of surgery, dentistry, etc. Yet the ancient human bodies discovered by one American expedition in Babylonia were thrown out on the rubbish heaps, as unworthy of preservation!

We have just referred to the domestication of grains, a matter which suggests the importance of *botany* and the whole range of vegetable life in the study of any ancient people (see Fig. 2). Fewer areas of the natural world have been more completely ignored by



By the kindness of Field Museum of Natural History, Chicago

FIG. 1.—THE BODY OF A PREHISTORIC EGYPTIAN

In such a body the alimentary tract, if preserved, frequently contains grains of barley or more rarely millet, remains of food eaten six thousand years ago.

oriental research. Georg Schweinfurth deplored the lack of interest in such studies among students of the ancient world.²⁰ Hrozný called attention to an effort by one of his colleagues to identify an ancient Assyro-Babylonian sign for grain as a designation for maize, a cereal which did not reach the Old World until after the discovery of America,²¹ as most of our children find out in kindergarten!

²⁰ *Annales du Service des antiquités de l'Égypte*, VII (1906), 203-4. Valuable work has been done by him, by P. E. Newberry, by Ludwig Keimer (continuing Schweinfurth's work), and others.

²¹ F. Hrozný, *Das Getreide im alten Babylonien* (Wien, 1913), p. 4; cf. A. Deimel in *Zeitschrift für Assyriologie*, XXII (1909), 40.

Körnicke, the great specialist in cereals, urged upon the learned societies of Europe the importance of botanical investigation in the ancient lands of the Near East, and for many years endeavored to secure their support for a botanical expedition there, but without success.²² For lack of such support it was not until 1906 that, under



FIG. 2.—STUMP OF A SO-CALLED MYRRH-SYCAMORE PLANTED NEARLY 1500 B.C.

The tree the stump of which is seen at A was planted in black earth inclosed by a low brick wall. It was one of a number brought from the Somali coast of Africa by Queen Hatshepsut early in the fifteenth century B.C. and is the earliest known example of such transplantation. Its exact botanical identity has still to be determined.

instructions from Schweinfurth and Körnicke, the wild ancestor of domestic wheat was found in Palestine by Aaronsohn.²³

This discovery demonstrates at once that the domestication of the wild grasses from which our cereals are descended took place in the region of the intercontinental bridge and was the work of peo-

²² Schweinfurth, *op. cit.*, p. 203.

²³ Aaronsohn and Schweinfurth, "Die Auffindung des wilden Emmers (*Triticum dicoccum*) in Nord-Palästina," *Alt-Neuland*, III (1906), 213-20; *Vossische Zeitung*, September 21, 1906, republished in *Annales du Service des antiquités de l'Égypte*, VII

ples of the Egypto-Babylonian group. For the wild wheat or emmer (*Triticum dicoccum dicoccoides*, or, better, with Cook, *Triticum hermonis*) is always found in company with wild barley (*Hordeum spontaneum*), while wild rye (*Secale montanum*) and wild oats (*Avena strigosa*) are found in the same region, the oats in Egypt. There can be no doubt that the occurrence of all these wild ancestors of our leading cereals in this region indicates where they were domesticated. The settlement of this question is another fatal blow to the theory of Western origins set forth in M. Salomon Reinach's very able essay, *Le mirage oriental*.²⁴

Whether the rise of agriculture took place in Babylonia or Egypt is still an unsettled question. Hrozný has made the interesting observation that the Babylonian word for emmer or split wheat, the earliest form of cultivated wheat, viz., *bututtu*, is the same as its Egyptian name, *boṭet*. Hrozný concludes at once that the Egyptians borrowed it from Babylonia.²⁵ But the word is as old in Egyptian documents as in those of Babylonia, while *the thing it designates* can be traced back in Egypt to a point a thousand years earlier than as yet in Babylonia. The evidence thus far available, therefore, is more favorable to a diffusion from the Nile to the Euphrates than the reverse.²⁶ The Egyptians, moreover, devised the plow by an adaptation of the hoe (Fig. 3), so that the plow grew up in the course of the evolution of the Egyptian wheat and barley complex as a Nilotic product.²⁷

(1906), 193-204; O. F. Cook, *Wild Wheat in Palestine* (U.S. Department of Agriculture, Bureau of Plant Industry, Bull. No. 274 [Washington, 1913]); G. Schweinfurth, "Über die von A. Aaronsohn ausgeführten Nachforschungen nach dem wilden Emmer . . .," *Berichte der Deutschen botanischen Gesellschaft*, XXVIa (1908), 309-22; A. Aaronsohn, *Agricultural and Botanical Explorations in Palestine* (U.S. Dept. of Agric., Bureau of Plant Industry, Bull. No. 180 [Washington, 1910]).

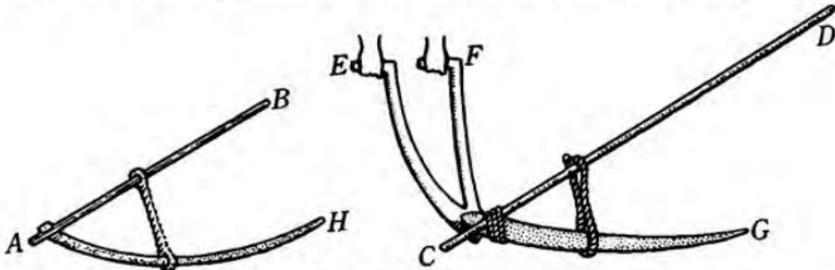
²⁴ *L'Anthropologie*, IV (1893), 539-78 and 699-732.

²⁵ Hrozný, *op. cit.*, pp. 69-70.

²⁶ Although wild emmer has not yet been found in Northeast Africa, it should be noted that botanical exploration there is still far from complete, and that such nummulitic limestone crevices as those in which Aaronsohn commonly found his wild emmer growing abounded in the river terraces of the prehistoric Nile.

²⁷ See demonstration in the author's William Ellery Hale Lectures, published in the *Scientific Monthly*, October, 1919—March, 1920.

The consideration of the plow, involving draft animals (Fig. 4), raises the whole question of *animal life* and its far-reaching impor-



From the writer's "Ancient Times," by courtesy of Ginn and Company

FIG. 3.—EVOLUTION OF THE PLOW FROM THE HOE

An Egyptian wooden hoe and the wooden plow which grew out of it



FIG. 4.—EGYPTIAN PEASANTS PLOWING

A tomb relief of the twenty-eighth century B.C. in the tomb of Ti at Sakkarah

tance for the investigation of the ancient world. The only comprehensive treatises available in this field are those of specialists in

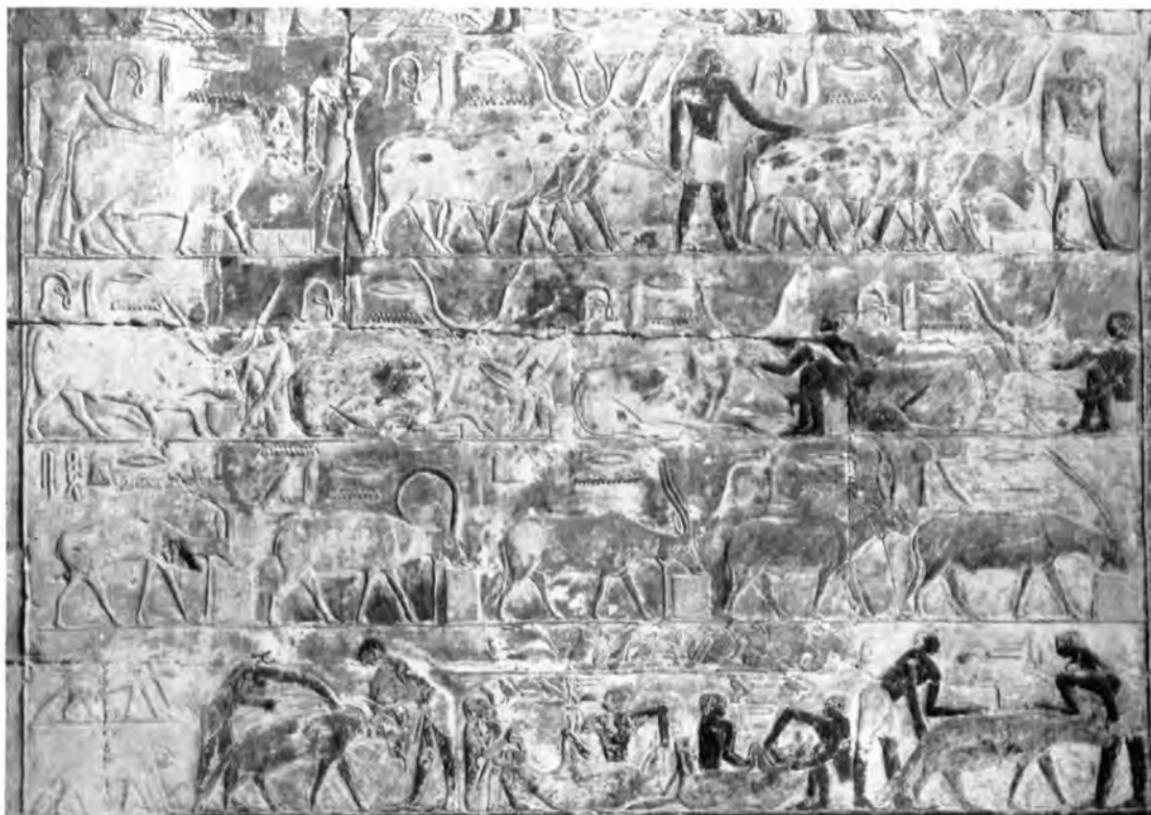


FIG. 5

animal husbandry, general zoölogists, and paleontologists. These students of the natural world, however great their ability as natural scientists, have not commanded the monumental material which would enable them to reach final results.²⁸ The investigations of Dürst, based on insufficient materials and much affected by the now discredited older chronology of Western Asia, especially the excessive dates computed by De Morgan, led him to find the origin of the leading domestic animals in Asia. Later investigations by the very able Frenchmen, Lortet and Gaillard, covering a larger body of ancient remains than had ever before been at the disposal of any scientist, have shown that Dürst's alleged demonstration of an Asiatic origin of the domestic cattle of Egypt is without foundation. Hilzheimer has since identified the wild ancestor of the long-horned cattle of Egypt (*Bos africanus*) on monuments from more recent excavations not known to Dürst. In confirmation of Hilzheimer's identification a portion of the actual skull of the wild ancestor, the urus (*Bos primigenius*) of Pleistocene age, has been found in Egypt.²⁹ As Lortet concludes, therefore, there is no occasion to seek the wild ancestors of the earliest domestic animals of ancient Egypt in Asia. They lived in Africa and were domesticated in the lower Nile Valley at an enormously remote date (cf. Fig. 5) as a result of the desiccation which produced the Sahara Desert and drove the plateau animals to take refuge in the Nile gorge. They are shown already domesticated on monuments as old as the middle of the fourth millennium B.C.

²⁸ See especially L. C. Lortet and C. Gaillard, "La faune momifiée de l'ancienne Égypte," *Archives du Muséum d'histoire naturelle de Lyon*, VIII-X (1903-9); Conrad Keller, *Die Abstammung der ältesten Haustiere* (Zürich, 1902); J. U. Dürst, *Die Rinder von Babylonien, Assyrien und Aegypten* (Berlin, 1899); Max Hilzheimer, *Die Haustiere in Abstammung und Entwicklung* (Stuttgart, 1909); also the valuable works of Lydekker.

²⁹ See Hilzheimer in L. Borchardt, *Das Grabdenkmal des Königs Šaš̄u-Re*, Bd. II, *Die Wandbilder* (Leipzig, 1913), Text, pp. 173-75.

FIG. 5.—STALL-FEEDING OF SEMI-DOMESTICATED ANIMALS—ANTELOPES AND HYENAS—ALONG WITH CATTLE

Antelopes of five varieties are eating from mangers. Relief scene in the tomb of Mereruka at Sakkarah, Egypt, twenty-seventh century B.C.

The discovery of the skull of the urus, just mentioned, suggests the importance of *geology* to the orientalist. The results already achieved by the Oriental Institute in this field of investigation have demonstrated its necessity. As a consequence of these researches we are now in possession of at least an outline of the geological history of the Nile, and in that geological history we can place the earliest evidences of man. On the other hand, the inaccessibility and insecurity of the Euphrates and Tigris regions until recent years have so retarded such investigation in these two river valleys that their detailed geology is quite unknown. Not only the buried evidence of the Tigris and Euphrates river terraces, but even the surface evidence, is still almost untouched. Along these terraces, either on or under the surface, must be found the bodies and the works of men, and the bones of animals (cf. the later archeological evidence of Fig. 6), which will enable us to recover the lost chapters of the prehistoric human career in Western Asia. It is important to notice that the prehistoric burials which have revealed the pre-dynastic culture of the fourth and fifth millenniums in the Nile Valley were found not in the alluvium but alongside it in the river terraces. Who knows what similar terraces along the Two Rivers may yet yield?

It should be remembered also that pottery and other evidences of human handicraft have been found by borings in the lower levels of the Egyptian alluvium as deep as 39, 45-50, and even 89 feet.³⁰ In a well drilled for the new headquarters building of the Oriental Institute at Luxor fragments of pottery were found at a depth of over 80 feet.³¹ It is probable from these facts that a prehistoric culture of enormously remote date lies deeply buried under the alluvium in the Nile Valley. The pottery of that age is probably the earliest yet discovered anywhere, and the men who used it must have lived at a time when there was still a very scanty accumula-

³⁰ Cf. Leonard Horner, "An Account of Some Recent Researches Near Cairo," *Philosophical Transactions of the Royal Society of London*, CXLVIII (1858), 53-92, esp. pp. 75-76, and J. de Morgan, *Recherches sur les origines de l'Égypte: L'âge de la pierre et les métaux* (Paris, 1896), p. 19.

³¹ There was wheelmade pottery among the sherds brought up by the drill. This fact raises complicated questions which require careful study.

tion of alluvium in the Nile gorge. It would seem to be of the highest importance to organize a systematic campaign of boring in order



FIG. 6.—DOMESTICATED HORSES (LOWEST ROW) IN BABYLONIA NEARLY 3000 B.C.

This stone plaque, discovered by Preusser at Khafaje during the Oriental Institute's Iraq excavations, carries the domesticated horse back nearly one thousand years earlier than he was heretofore known (see p. 359). A missing corner (lower left) has been restored from a fragment found by the University of Pennsylvania at Ur.

to recover further evidence of this early pottery culture. Geologically it may be noted that no boring north of Esna has ever reached the floor of the Nile gorge. A boring expedition would be of fundamental value to both geology and archeology, and might disclose the earliest agricultural civilization ever found. It is greatly to be hoped that at some future time such an investigation may be undertaken.

These remains in the alluvium must date from the Glacial Age (of Europe), thousands of years before the earliest prehistoric cemeteries of Egypt. The alluvium of Babylonia, like that of Egypt, being the latest geological creation of the river, is intimately involved in the career of the prehistoric men who dwelt upon it. It is highly important to determine the age of the venerable Plain of Shinar, as the Hebrews called earliest Babylonia. From evidence that Eridu was a seaport some four thousand years ago, though now about 125 miles from the Persian Gulf, one may calculate that about 7000 B.C. the Babylonian plain was just beginning to form, and that the site of later Babylon did not yet exist. I had been using this computation in university lectures for several years as an obvious fact, when the same observation was published by Petrie.³² On the other hand, Sir William Willcocks has called attention to the possibility that Eridu might, like modern Basrah, have been a seaport on the river; for the fact that it was a port four thousand years ago does not prove that it was then situated on the Persian Gulf.³³ In response to my query regarding the distribution of the alluvium which had come down around Eridu in the last four thousand years, Sir William very kindly wrote me, explaining that in his judgment the delta had expanded sidewise (meaning, I take it, as one opens a lady's fan) and not by advance of the shore line parallel with itself. This would complicate such calculations as the one just offered. It is evident that the final resolution of this important problem will require the collection and critical scrutiny of all the documentary evidence available, combined with an exhaustive examination of

³² W. M. F. Petrie, *Eastern Exploration Past and Future* (London, 1918), p. 69.

³³ Sir William Willcocks, *From the Garden of Eden to the Crossing of the Jordan* (Cairo, 1918).

the region by a specialist in recent and surface geology, who should also be familiar with the valuable observations which the long experience of Sir William Willcocks with the rivers of the Orient had so thoroughly equipped him to make.

The *hydrography* of the Near East is also a problem of the greatest importance in our researches. There seems to be an impression that any country in a region of rainy winter and dry summer must necessarily resort to irrigation—a supposition of course disproved by northern Mediterranean countries such as Greece, where grain has always been cultivated and brought to harvest without irrigation. An eminent orientalist refers to the “heavy rainfall” of Babylonia, whereas it was a rainfall of *less than 7 inches* which inexorably forced the early Sumerians to resort to irrigation. The necessity of controlling the floods for the purposes of agriculture thus became the most influential factor in their material life, and of course profoundly modified their traditions, their religion, and their whole conception of life.³⁴

THE PERSONNEL OF THE NEW ORGANIZATION NEEDED

As we look out over the Eastern Hemisphere, with its great central nucleus of Egypto-Babylonian culture on each side of the intercontinental bridge, and realize that throughout these birthlands of civilization both the life of man and the nature and characteristics of his habitat, always conditioning that life, have been opened by the consequences of the World War to unrestricted scientific investigation, it is evident that we need an organization which will insure us the assistance of men thoroughly trained not only in oriental languages and archeology, but also in physical anthropology, botany, paleontology, geology, meteorology, and anthropogeography. These men cannot of course all be orientalists, nor do they need to be so. But one or more such men should at different times accompany every American expedition which goes into the field. Experience has shown that the universities are willing to contribute the services of natural scientists, who are glad to co-

³⁴ See Ellsworth Huntington's valuable contributions to this subject in *The Pulse of Asia* (Boston and New York, 1907) and various monographs.

operate and, as expedition members under no expense, contribute their needed aid from season to season. Only in this way shall we accomplish in the Old World what the Americanists are so successfully doing for the New.

The departments of oriental studies which the American universities have been maintaining are built up, as we all know, on the model of a traditional department of Greek or Latin organized to teach languages. The futility of such an organization in oriental science is evident when it is recognized that we orientalists are engaged not only in teaching oriental languages but also in *recovering a great group of lost civilizations*. It is obvious that the orientalist who is a university teacher is as unable to meet the requirements of his science single-handed as the astronomer would be to study the skies without his observatory or his staff of assistants. The orientalist cannot do his work without a properly equipped building, which should be a veritable laboratory of systematic oriental research, containing *all the available evidence of every kind and character*, whether in originals or in reproductions, in photographs, hand copies, drawings, surveys, maps, plans, notebooks, and journals, filed in systematically arranged archives (see pp. 402 f.). This equipment is as necessary to a proper study of the career of man, I repeat, as an astronomical observatory with its files of observations, computations, and negatives to an investigation of the career of the universe. It is evident that, wherever possible, not only the methods but especially the equipment of natural science should be applied to our study of man in the Orient, because not only the vast body of documents which he has himself left behind but also *all data and observations revealing the conditions of his life* must be systematically gathered, filed, and housed together, as are the data of the astronomer.

CHAPTER II

THE BACKGROUND OF THE ORIENTAL INSTITUTE

An organization framed to meet the requirements of the foregoing situation was necessarily a slow growth. Oriental research in the University of Chicago had developed in a succession of stages which formed a logical preparation for the foundation of such an institution as the Oriental Institute. The first president of the University of Chicago was himself an orientalist; and from the beginning of the work of the new University until his lamented death, early in 1906, President Harper had made heroic efforts both to conduct the administration of the great new University project as a whole and, at the same time, not only to serve as administrative head of the Department of Semitic Languages but also to carry on work as a professor in that Department. This arrangement had certain advantages, but also suffered under some serious disadvantages. It was, of course, quite impossible for one man single-handed to carry all these responsibilities, and in its earlier years the Department was therefore unavoidably often left to shift for itself. One of the early difficulties which complicated and embarrassed its work was the lack of original scientific materials, and for a long time even of necessary books, in the oriental field. Though President Harper was indefatigable in his efforts to promote research, a Department of Semitic Languages with insufficient books, with no original monuments of any kind, and with no building was necessarily very limited in research activities. When the writer returned from his first journey in Egypt in the spring of 1895, the Department of Semitic Languages was housed in two rooms in the southeast corner of the fourth floor of Cobb Hall. There was no room for filing even the photographs which he had brought back. The original antiquities, for purchasing which he had had an appropriation of \$500, were stored in the basement of Walker Museum along with the geological materials housed in that building.

The first step toward furnishing research opportunities for the members of the Department was an arrangement by which the President's brother, Robert Francis Harper, professor of Assyriology, was permitted to spend six months of each year at work on the original cuneiform sources in the British Museum. This very wise arrangement, which continued for years, resulted in the production of a long series of volumes containing hitherto unpublished cuneiform letters.¹ Later a similar division of time was arranged for the present writer, with the result that on the invitation of the royal academies of Germany he was able to copy all the Egyptian inscriptions in the museums of Europe (except St. Petersburg and Athens) as sources for the compilation of an exhaustive Egyptian dictionary subsidized by the German emperor (see pp. 384-87).

Useful as such special arrangements proved to be, they were nevertheless entirely inadequate to meet the needs of a Department whose responsibility as a whole was the study of a great group of lost civilizations covering many thousands of square miles of country in Western Asia and Northeast Africa. In 1902, therefore, the present writer submitted to President Harper a plan for field researches in the oriental lands themselves. This brief was approved, and an interview with Mr. F. T. Gates aroused his interest. As a result of that interest, Mr. John D. Rockefeller agreed, after a brief interval, to contribute the sum of \$50,000 for beginning archeological field operations in the ancient Near East. Thereupon President Harper organized what was called the "Oriental Exploration Fund" of the University of Chicago.²

Improving the opportunity of a trip to Europe, President Harper himself visited Constantinople. On November 1, 1903, the Sultan of Turkey issued a firman for the excavation of the ancient Baby-

¹ Robert Francis Harper, *Assyrian and Babylonian Letters Belonging to the Kouyunjik Collections of the British Museum* (Chicago: University of Chicago Press, 1892-[1914]). 14 vols.

² The officers of the organization were: general director, William Rainey Harper; directors, Robert Francis Harper for Assyria and Babylonia, James Henry Breasted for Egypt, James Richard Jewett for Palestine; field director for Babylonia, Edgar James Banks; secretaries, Ira Maurice Price and George Stephen Goodspeed; treasurer, Charles L. Hutchinson.

lonian city of Adab, called by the modern natives Bismayah.³ Work was conducted at this site by the field director, Dr. Edgar J. Banks, from December 25, 1903, to June 1, 1904, and was continued for a second season by the expedition engineer, Mr. Victor Persons. Preliminary reports of their investigations were published in the *Biblical World*⁴ and the *University Record*.⁵ After these two seasons of work an unfortunate misunderstanding with the Turkish authorities resulted in closing down the expedition. From its excavations the University acquired some valuable original monuments, inscriptions from which have been published from the papers of our lamented colleague, Professor D. D. Luckenbill, edited by his successor, Professor Edward Chiera.⁶

Following the untimely conclusion of the Babylonian expedition President Harper requested the present writer to begin field work in Egypt with the balance of the \$50,000 still available. The crying need for adequate and accurate copies of the ancient inscriptions slowly going to destruction *in situ* led the writer to undertake an epigraphic survey of the inscriptions on the Nile, beginning at the ancient Ethiopian capital of Meroë, the southern limit of monuments in the cataract region (cf. Fig. 7). This epigraphic survey (cf. Fig. 8) covered about 1,000 miles of the Nile Valley, from the southern limit of monuments at Meroë northward to the First Cataract. Preliminary reports of its work appeared in the *University Record*⁷ and more fully in the *American Journal of Semitic Languages and Literatures*.⁸ Complete copies of all the inscriptions

³ The spelling "Bismya" in the publications of the Oriental Exploration Fund is incorrect. I was told in 1920 that the natives of the region write the name "Bismāyah" (بِسْمَايَا).

⁴ XXIII-XXIV (1904), *passim*.

⁵ VIII (1903/4), 195-97; IX (1904/5), 33-34, 131-39, 213-14; X (1905/6), 65-66. In addition, the field director, Dr. Edgar J. Banks, published a popular account of the Bismayah work, *Bismya or the Lost City of Adab* (New York, 1912).

⁶ Daniel David Luckenbill, *Inscriptions from Adab* ("Oriental Institute Publications," Vol. XIV [Chicago: University of Chicago Press, 1930]).

⁷ XI (1906/7), 32-33.

⁸ XXIII (1906/7), 1-64, and XXV (1908/9), 1-110, reprinted as Breasted, *The Temples of Lower Nubia* and *The Monuments of Sudanese Nubia* respectively.

aboveground, and of some which the expedition excavated, were brought back to be prepared for publication. For lack of publication funds, however, they could not be published. This large body of inscriptions has now, however, been taken in hand again and will be published in two volumes by the Oriental Institute with the



FIG. 7.—BIVOUAC IN THE FOURTH CATARACT REGION

The felucca in the foreground carried the Nubian epigraphic expedition (1905-7) through the Fourth Cataract. This was the first archeological expedition to descend through the rapids from Abu Hamed to Gebel Barkal (140 miles).

assistance of Dr. John A. Wilson and the artists of the Institute's Epigraphic Expedition (see p. 408).

The epigraphic survey had been begun in the hope that it might be continued to include *all* Egypt, from the cataract region northward to the sea. In a kind letter Mr. Gates expressed great interest in the project and asked me for a budget covering the cost of the entire undertaking, together with the total cost of publication. As



FIG. 8.—PHOTOGRAPHING A ROCK INSCRIPTION OF AN ANCIENT VICEROY OF NUBIA, INI, AT ABU SIMBEL

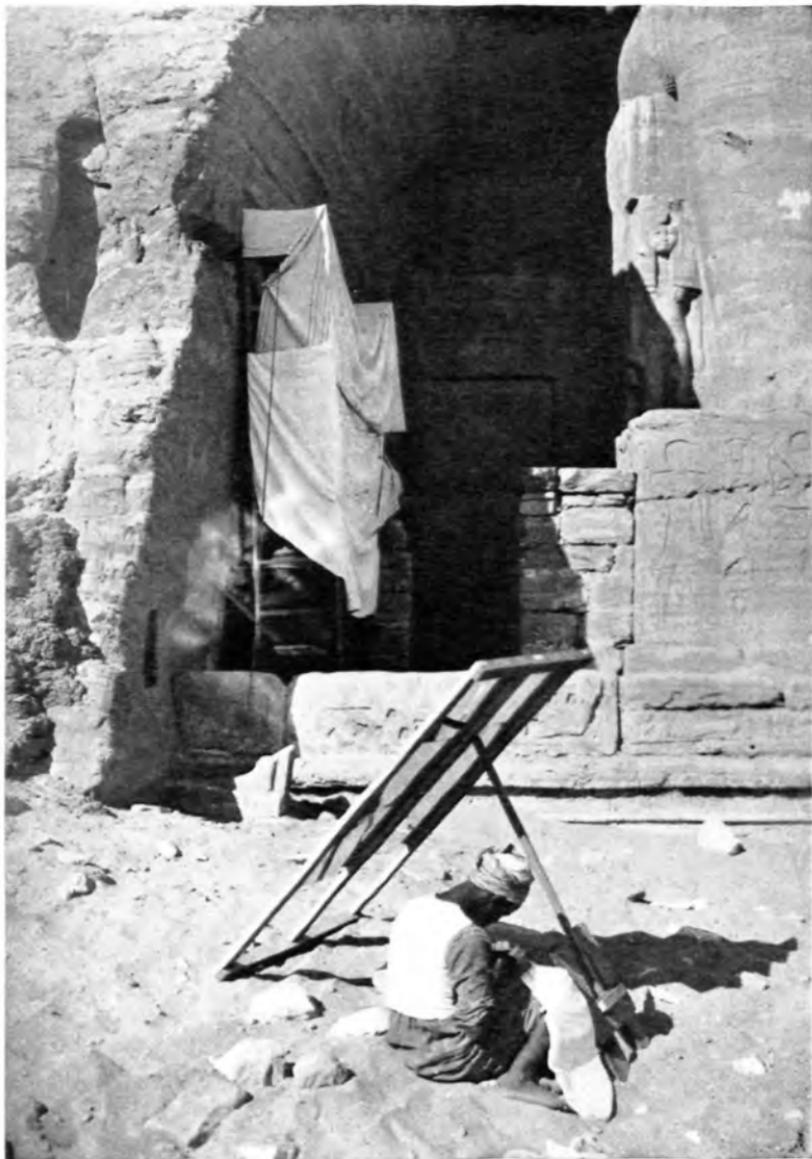


FIG. 9

THE BACKGROUND OF THE INSTITUTE 33

soon as field conditions permitted, I compiled the desired information. Employing the epigraphic field methods which I was then using, but which we would now regard as primitive (cf. Fig. 9), I estimated fifteen years as the time needed for the project, at an annual maintenance cost of \$20,000. With additional publication costs of \$5,000 annually, the total subvention required was \$375,000. For fifteen years' work of an expedition, including publication, this total now seems moderate. But it was not so in 1907. At that time it was still to be many years before it would be possible to create among the supporters of such work a state of mind which would recognize the necessity of investing large sums of money in salvaging completely the surviving evidences of the early life of man. The needed funds were not forthcoming.

In January, 1906, as our dahabiyeh lay moored before the great temple of Abu Simbel in Lower Nubia (Fig. 10), I hauled down our flag to half-mast on arrival of the news of President Harper's passing. The financial complications in which the University found itself at that time made it impossible to undertake a further campaign for raising funds. With my final return from the Sudan in 1908 the field work of the University of Chicago in the ancient Near East ceased. Prospects of securing support for the resumption of this work seemed favorable some years later, but the outbreak of the World War naturally ended all such hopes.

After the armistice, however, the writer drafted a letter calling attention to the unusually favorable opportunity for the resumption of field work in the Near East by the University of Chicago and sent the letter to Mr. John D. Rockefeller, Jr. In a presidential address before the American Oriental Society in April, 1919, the writer presented a survey of the scientific responsibilities of America in the ancient Near East substantially as sketched in pages

FIG. 9.—METHOD OF SHADING AND ILLUMINATING AN INSCRIPTION FROM A REFLECTOR ERECTED AT ONE SIDE

The sunshine on the inscription before the copyist on the scaffolding comes from the tin reflector beside the native in the foreground. The inscription, covered with canvas to exclude the excess of light, is the stela at Abu Simbel recording Ramses II's marriage to a Hittite princess.



FIG. 10.—DAHABIYEH OF THE NUBIAN EPIGRAPHIC EXPEDITION
Moored (at left of another) in front of the Abu Simbel temple in January, 1906

3-26 of this volume,⁹ and suggested for meeting these responsibilities an organization to be called the "Oriental Institute." A fortnight later he received from Mr. Rockefeller, Jr., a very kind letter agreeing to support the work of the proposed Oriental Institute for a period of five years on a budget of \$10,000 a year.¹⁰ Thereupon Mr. Martin A. Ryerson, president of the Board of Trustees, at once gave assurance that for the first year he would contribute \$5,000 more and that the University also would appropriate a like sum. The Board at once took formal action approving the immediate organization of the Oriental Institute; and on the suggestion of Mr. Wallace Heckman it added another \$1,000 to its appropriation, for the special purpose of acquiring any useful books thrown on the market by post-war conditions. Checks were received from several outside friends also, especially Mrs. Elizabeth Milbank Anderson, who was greatly interested in our project.

The conditions resulting from the World War made it urgently necessary for the new Oriental Institute not only to undertake a reconnoissance of the Near East as a whole but also to begin the establishment of preliminary contacts with cabinet officers, government officials, diplomatic staffs, and the whole range of influential personages without whose interest and support it would have been impossible not only to begin our field operations but, under post-war conditions and difficulties of transport, even to obtain passage to the Near East or to gain admission to the countries forming our objective. It ought to be said at this point that, from the beginning of the Institute's development in 1919, one of its important activities has unavoidably been the creation and maintenance of a diplomatic sphere of action, which has demanded a great deal of thought and investigation, a large body of correspondence, and much of the Director's time and energy. It has now become one of the Institute's permanent responsibilities, carried for the most part by the executive secretary of the Institute.

In undertaking our preliminary reconnoissance of the Near

⁹ See *Journal of the American Oriental Society*, XXXIX (1919), 159-84.

¹⁰ See *American Journal of Semitic Languages and Literatures*, XXXV (1918/19), 196-204.

East,¹¹ therefore, our work was much aided by the cordiality of the relations which it proved possible to establish with the European governments in control of the Near East, especially the English and the French. This fact is well illustrated by Lord Allenby's cordial support of my efforts to begin airplane photographic records (see p. 39). I was asked to meet the Milner Commission to discuss Egyptian affairs, and found both Lord Milner and Mr. Alfred Spender, secretary of the Commission, very hopeful and sympathetically interested in the future of scientific research in the Near East. They were anxious to see incorporated in the report of the Milner Commission recommendations for a sound policy in the government control and support of archeological research; and I had the pleasure of handing Mr. Spender, at his request, a group of such recommendations.

It had early become evident that our plans for an Asiatic expedition could not be put through without more direct support from the British government. I therefore wrote to Lord (then Mr.) Balfour, the foreign minister, explaining the situation and asking the co-operation of the British foreign office in our effort to begin scientific work in Western Asia. Shortly after arriving in Cairo I received from Mr. Balfour a kind letter stating that he was relinquishing the foreign office to Lord Curzon, but assuring me that he had recommended the support of our work to his successor. A letter from the foreign office soon assured me that Lord Curzon had written to Lord Allenby and to the Cairo foreign office, as well as to the Civil Commissioner in Mesopotamia, kindly requesting them to give us every necessary aid. Our first great difficulty, the lack of transportation to Mesopotamia by way of Bombay (as conditions made it impossible to go out there overland from the Mediterranean), was thus overcome; and we cannot be too grateful for the cordial support thus given us by the British government.

The French minister at Cairo, M. Lefèvre-Pontalis, an old friend of the lamented Émile Sénart, so long president of the Société Asiatique, at once showed a cordial interest in our enterprise. He supplied me with letters to the French provisional government at

¹¹ Most of the following account (pp. 36-64) is condensed from the writer's report in "Oriental Institute Communications," No. 1, pp. 2-43 and 52-54.

Beirut and also with a general letter to all French officials whom we might meet on the frontiers of Asiatic territory in French occupation. He likewise informed the French government at Beirut of our proposed travels in those regions, received a favorable reply, and handed me an official authorization to traverse French Syria.

Our outstanding responsibilities on the Institute's first expedition to the Near East were two: first, to secure by purchase from antiquity dealers there, as well as in Europe, at least a share of the ancient monuments and documents of all sorts which had been accumulating in their hands during the war; and second, to make at the same time a preliminary survey of sites available for field investigations, besides ascertaining the attitudes of the governments concerned and learning the prevailing local conditions. Since the subsequent development of Oriental Institute operations in both Egypt and Western Asia was based on this reconnoissance, a brief account of it must be included here.

Leaving America in the summer of 1919, the writer arrived in Cairo on October 30 after a journey of almost insurmountable difficulties due to post-war complications. The ferment of nationalistic agitation in Egypt made our survey there rather difficult and at times unsafe, but these obstacles were slight compared with those which we afterward met in Western Asia. The writer was joined in Egypt first by Ludlow S. Bull and later by William F. Edgerton and A. W. Shelton, all of them graduate students who desired to share in the reconnoissance as volunteers. With the arrival of D. D. Luckenbill, our Assyriologist, our final personnel of five men was complete.

We were especially impressed in Egypt with the dire need of epigraphic work to save from destruction its fast-perishing written records. In forgotten storage in the unfloored basement of the Cairo Museum lay beautifully painted wooden coffins bearing precious Coffin Texts which were submerged in water whenever there was an inundation above the normal level. These texts had never been copied. The need for copying the records still surviving on tomb and temple walls, as discussed in chapter ix, gave me the greatest anxiety; but the resources of the Oriental Institute were still too limited to undertake such work on the great temple build-



FIG. 11

ings. I cherished the hope, however, that the Institute might undertake to save and publish the Coffin Texts.

While visiting in company with Lord Allenby the scanty ruins of the pyramid of Abu Roash, the northernmost pyramid of Egypt, some 5 miles north of the Gizah group, I was impressed with the fact that the enormous construction causeway, still in a remarkably good state of preservation, which leads up from the valley to the plateau could not be photographed except from the air. On having his attention called to this fact, Lord Allenby very kindly placed a military plane at my disposition, and a few days later I was able to take my first flight in an airplane from the Heliopolis airdrome across to Abu Roash and then southward along the 60-mile line of pyramids to the mouth of the Faiyum. In spite of seasickness and a two-hour tour of the air, whereas a beginner usually takes not more than twenty minutes, I secured some interesting views until the cable release of the camera shutter broke, so that I was snapping shots of the pyramids from the height of a mile with closed shutter for a matter of an hour and a half without knowing it, because the click of the shutter could not be heard through the roar of the motors. Fortunately, the first exposures before the accident were fairly good; and the very first one, showing the causeway and pyramid of Abu Roash, was entirely successful (Fig. 11). This experience is mentioned here because it was in the nature of an experiment and furnished a complete demonstration of the usefulness of aerial photography in making field records. In our Institute operations in the field we have followed up this initial experiment, and a modification of it by the use of a meteorological balloon has been developed by P. L. O. Guy at the Megiddo excavations (cf. p. 249).

FIG. 11.—AIRPLANE VIEW LOOKING NORTH ACROSS THE VAST CONSTRUCTION CAUSEWAY OF THE DEMOLISHED PYRAMID OF ABU ROASH, EGYPT

AB is the causeway or ramp; *C* is the site of the demolished pyramid. This snapshot, the first ever made by the writer from an airplane, was taken at an elevation of about a mile, at a distance of probably $1\frac{1}{2}$ miles from the causeway. The Abu Roash pyramid, the northernmost in Egypt, was erected by Dedefre of the Fourth Dynasty, successor of the famous Khufu (Cheops), twenty-ninth century B.C. It has been completely demolished by modern native quarriers.

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One of the gratifying results of our stay in Egypt was the opportunity of examining the stocks of the antiquity dealers and making extensive purchases of valuable original sources. The exhibition halls of the Oriental Institute are rich in monuments purchased on this journey. Among them are two beautiful rolls of the Book of the Dead: Papyrus Ryerson and Papyrus Milbank. I have a vivid recollection of Mr. Heckman's smile of amusement that a roll of the Book of the Dead should figure as the "book purchase" for which he had secured for me an appropriation of \$1,000. In response to urgent representations substantial additional funds were cabled to me in Cairo by President Judson, and Mrs. Elizabeth Milbank Anderson cabled that she would contribute \$2,500 for the purchase of the papyrus of the Book of the Dead which now bears her name (Fig. 12).

Having completed our task in Egypt, we then turned our attention to Western Asia, where the conditions made our reconnoissance much more difficult and dangerous. To this Western Asiatic journey we must therefore give fuller attention. Sailing from Port Said on February 18, 1920, the party arrived without incident on Sunday, February 29, in Bombay. Thence after only forty-eight hours' delay we sailed on March 2 for Basrah, where we arrived on March 9 and disembarked on the 10th. As a result of Mr. Balfour's and Lord Curzon's kind letters, all facilities were at once granted us. A staff car was immediately placed at our disposal. In spite of the enormous extent of territory covered by the supply depots at Basrah, the car enabled us to assemble rapidly the supplies and equipment needed for our explorations.

A few weeks before our arrival the railway from Basrah up the Euphrates side of the alluvial plain and across it to Baghdad had been completed. This was placed at our disposal, and the Oriental Institute expedition was thus the first archeological expedition to use the Basrah-Baghdad railroad. Leaving Basrah by the night train on March 16, with our supplies and equipment in a "goods van," we arrived at Ur Junction, some 120 miles from Basrah, on the morning of the 17th. We were permitted to keep the railway van for the permanent safeguarding of our stuff, while we made excursions out from the railway to the ancient sites we desired to

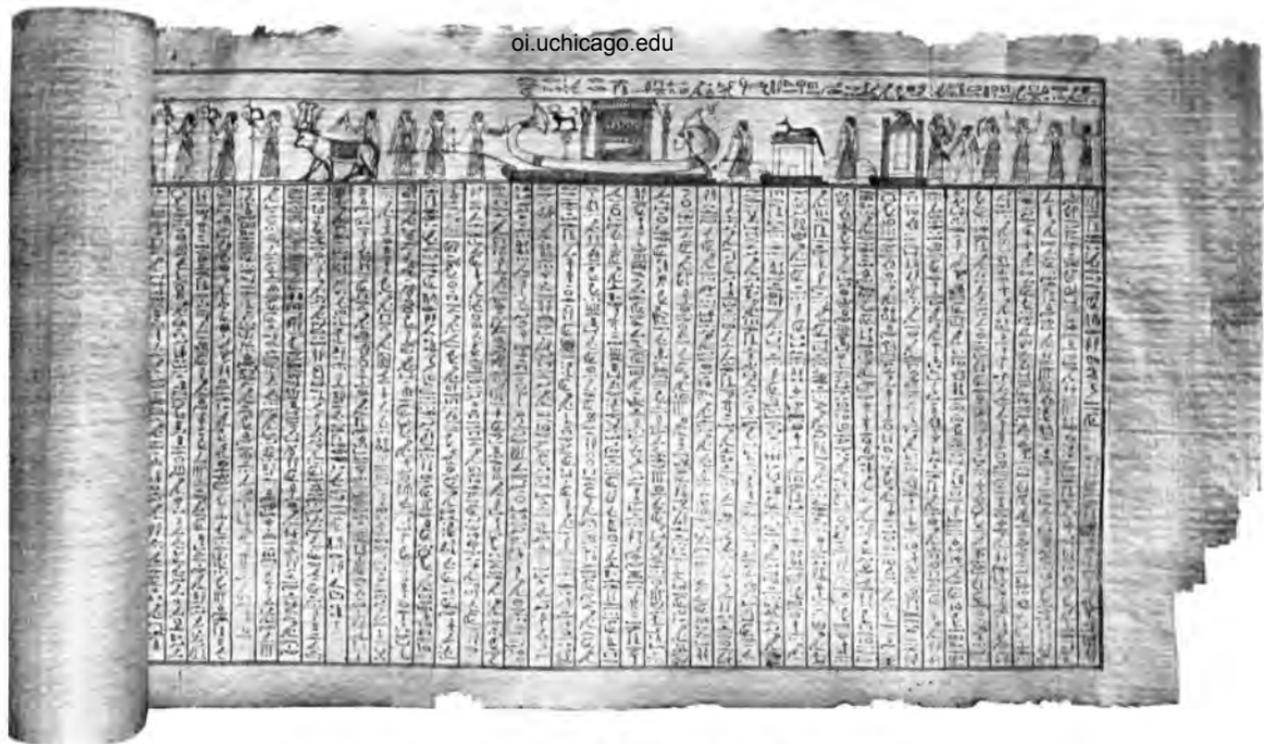


FIG. 12.—PAPYRUS MILBANK, AN EGYPTIAN BOOK OF THE DEAD

A hieroglyphic papyrus of the Ptolemaic period, presented by Mrs. Elizabeth Milbank Anderson. When this photograph was taken, the document was still in its original form, a roll, which proved to be about 35 feet in length. It is illustrated with vignettes of great delicacy and beauty, though not in colors.

study. After visiting ancient Ur and its neighbor Eridu (16 miles south of Ur), we proceeded up the Shatt el-Hai for some 80 miles north of the railway, through a very wild region over which had marched the British relief expedition which had endeavored to succor General Townshend before his surrender to the Turks at Kut el-'Amara. Besides the important Sumerian sites of Lagash and Umma, which contain remains reaching back of 3000 B.C., we inspected a number of unidentified city mounds on both sides of the Shatt el-Hai (Fig. 13), a little-explored region which gave evidence



FIG. 13.—PART OF OUR ARAB ESCORT IN LOWER BABYLONIA

Seven sheikhs accompanied our expedition on a 40-mile ride from Kal'at es-Sikkar on the Shatt el-Hai to Tell Yokha, ancient Umma.

of having been thickly populated at an enormously remote date. Here and elsewhere we saw much of the admirable work being done by the British in civilizing this turbulent district of wild nomads who had not paid any taxes to the Turkish government for fifteen years before the war.

Returning to the railway at Ur, we moved up the line through Lower Babylonia, making local trips away from the railway either in motor launches on the Euphrates or in automobiles, all furnished by the British administration. In this way the more important remaining sites of Lower Babylonia were visited, especially Senkerah, Warkah, and Niffer. The last of these had been partially excavated many years before by a University of Pennsylvania expedition.

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By March 29 we had reached Hillah, 6 miles from the ruins of Babylon, accessible now by railway (Fig. 14). Here General Wauchope, now Sir Arthur Wauchope, British high commissioner in Palestine, was very kind and finally took in Professor Luckenbill and myself as his guests. We spent nearly a week in studying the ruins of Babylon, left just as the German excavations had uncovered them, and made a great many photographs, copies, and plans. Forty miles south of Hillah we visited Nejef, the remarkable sacred city of the tomb of Muhammad's son-in-law 'Ali (Fig. 15)—



FIG. 14.—THE RAILWAY STATION AT ANCIENT BABYLON

At first called "Babylon Siding"; but the word "Siding" had been erased in favor of "Halt," producing a palimpsest both stages of which are still quite clear. The railway passes through the walls and directly across the residence portion of the ancient city.

a city which until the British conquest had with few exceptions been closed to non-Moslems. General Wauchope kindly accompanied us to the tower of Birs Nimrud (Fig. 16), the highest ancient building surviving in Babylonia, and he was much interested in the possibility of averting its threatening fall by repairs around the base of the tower—a piece of salvage work which very much needed to be done.

Still having with us our "goods van" carrying the outfit and provisions, we arrived in Baghdad on the evening of April 5. General (now Sir) Percy Hambro, the quartermaster-general, kindly took me in as his guest. Aside from visiting some neighboring ruins (Fig. 17), especially the marvelous palace hall at Ctesiphon, our time in Baghdad was largely spent in preparations for a trip up the

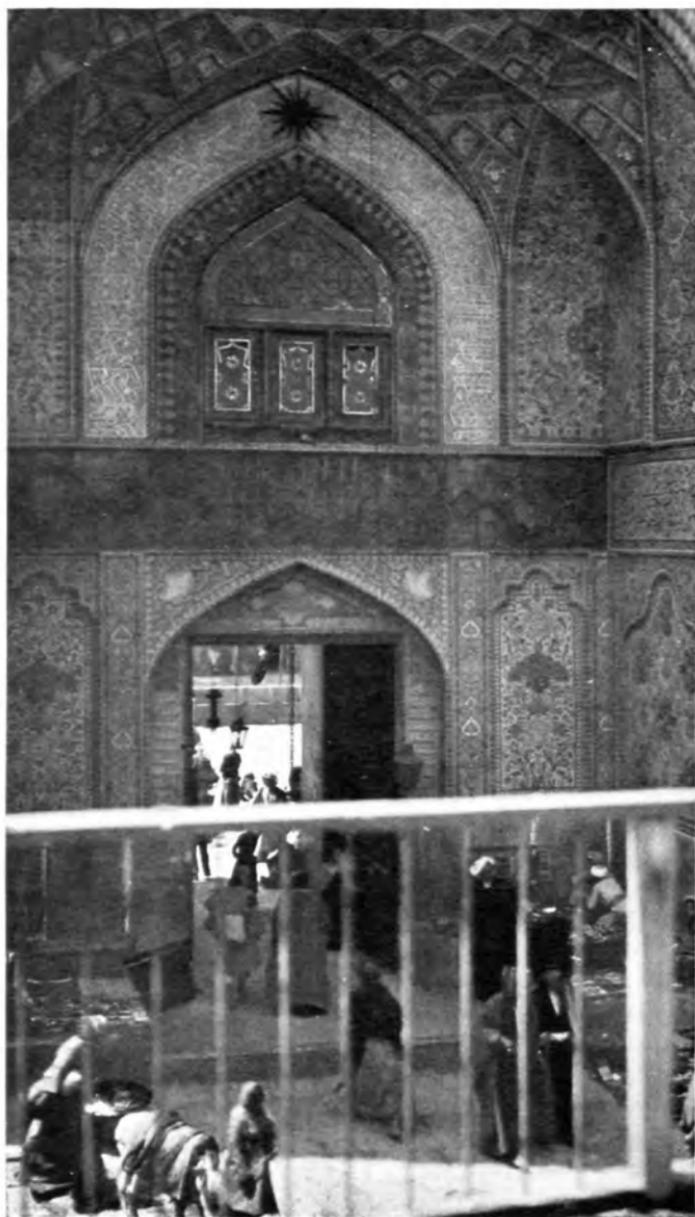


FIG. 15

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Tigris across Assyria to Mosul (Nineveh). Both Colonel (now Sir) A. T. Wilson, the civil commissioner, and General Hambro aided us without stint in all these preparations.



FIG. 16.—TEMPLE TOWER OF BIRS NIMRUD, UPPER BABYLONIA

This ruin is the tallest ancient building surviving in Babylonia; but the rains and weather were rapidly undermining it. The place has never been thoroughly excavated.

On April 12 all was in readiness for our journey northward up the Tigris by rail to Shergat, somewhat over 180 miles by train from Baghdad. Shergat is still the railhead and is likely to remain

FIG. 15.—GORGEOUS INCRUSTATION OF GLAZED PLAQUES AT THE ENTRANCE OF THE TOMB MOSQUE OF ʿALI AT NEJEF

This holy shrine of the great majority of the eastern Moslems is nearly one hundred miles south of Baghdad on the margin of the Arabian desert. The tomb of ʿAli is within; but the fanatical Moslems of the place, who were very hostile and had murdered the British Resident not long before our coming, would not permit us to enter. This photograph was made from a loft over a little shop; the houses entirely prevent a photograph of the whole front. Bodies of the dead are regularly carried in at this door, left for a time by the tomb of ʿAli, and then removed for burial. Note the tradesmen and money-changers at the entrance and the peddlers hawking their wares in the interior.



FIG. 17.—TEMPLE TOWER OF AKERKUF, UPPER BABYLONIA

Erected by the Kassites, this structure may have been built in the middle of the second millennium B.C. Its curious horizontal striations are due to the projecting matting laid at intervals between the horizontal courses of sun-dried brick. The people in the foreground, from right to left, are the intrepid explorer and able orientalist, Miss Gertrude Lowthian Bell (now deceased), who became an influential member of the British administration in Mesopotamia; General Hambro; Professor Luckenbill; and Miss Bell's father, Sir Hugh Bell.

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so for a long time. While there, we studied the remarkable ruins of Assur (Fig. 18), the earliest capital of Assyria, founded at least as early as 3000 B.C. The place had been almost completely excavated by the Germans, who had finished their work of clearance, from the latest ruins at the top down to the primitive rock, before the outbreak of the war. It is the only site in Western Asia east of Troy



FIG. 18.—GENERAL VIEW OF ASSUR, THE EARLIEST ASSYRIAN CAPITAL, ALMOST COMPLETELY EXCAVATED IN TEN YEARS

The photograph is taken from the top of the temple tower, looking southward along the west bank of the Tigris over a large part of the city. The hill in the foreground is covered with a modern cemetery. A German expedition began work here September 18, 1903, and finished its main clearance in December, 1913. A few unimportant supplementary clearances were afterward undertaken in the winter of 1913/14.

which has been so completely investigated, and it proved extremely instructive.

Leaving Shergat by automobile on April 14, we made the run of some 80 miles northward up the west side of the Tigris to Mosul, where the commander, General Fraser, very kindly took me in and arranged for the other members of the expedition to be put up at a native hotel. We began at once the study of the ruins of Nineveh, the latest Assyrian capital (Fig. 19), lying across the Tigris directly opposite Mosul. This kept us busy until an ebullition of the Kurds had settled down and we were permitted to run about 15 miles

northeast of Mosul to the foothills close under the northern mountains to visit the ruins of Khorsabad, the royal residence of Sargon II (722-705 B.C.), the father of Sennacherib. The exposed walls of the palace had almost entirely disappeared since its clearance by



FIG. 19.—PALACE PLATFORM OF SENNACHERIB AND ASSURBANIPAL AT NINEVEH (SEVENTH CENTURY B.C.)

Seen from the northwest corner of Nebi Yunus, looking north along the west wall (at left) of the ancient city. The dry bed of the Tigris extends along the west (left) side of this wall. The tents are those of British East Indian troops encamped on areas once occupied by ancient Ninevite houses. The modern graves in the foreground are immediately north of the tomb mosque of Nebi Yunus on the palace platform of Esarhaddon. No modern scientific excavations have ever been carried on in this great imperial city.

the French, but we found evidence that excavation would still be richly rewarded.

Crossing the river to the east side, we were also able to move down the Tigris some 20 miles below Mosul to another capital of Assyria, the biblical Calah, now called Nimrud. The temple tower and the palaces here, in spite of native vandalism, are in an unusually good state of preservation. The many sculptures and inscribed

records which project from the incumbering rubbish insure magnificent returns for excavation and a great opportunity for recovering and reconstructing an entire Assyrian city as well as a tremendous chapter of human history. We were accompanied in our inspection by the owner of the land on which these ruins stand, and accepted his invitation to dine at his house as we were returning to Mosul. We found that it was near the ruins of Balawat, an Assyrian palace of the ninth century B.C., which we also saw. It was from this palace that Rassam is reported to have taken out the massive bronze mountings of a palace gate richly adorned in *repoussé* designs. In so far as the writer knows, nothing has since been done there.

We had now ascended the Tigris about 275 miles above Baghdad and some 625 miles from the Persian Gulf, to the region where it issues from the northern mountains. North of us was a Kurdish population quite unsafe to penetrate. Indeed, the whole Mosul region was a hazardous one. A few days before our arrival a British officer had been murdered close by the ruins of Assur (Shergat). Of the fifteen political officers of the British administration, seven were murdered by natives, five before our arrival and two afterward. Such unsafe conditions have since been much improved. Our return to railhead at Shergat was delayed by a terrible cloud-burst which washed out the bridges. When we finally reached Shergat again on April 20 we found the railway broken in two places by the storm, while hostile Arabs had cut it in a third place. We were completely cut off from Baghdad and unable to reach it again until April 23.

On returning to Baghdad the Civil Commissioner informed me that a series of remarkable ancient wall paintings had been uncovered during the excavation of a machine-gun position in the enormous Roman stronghold of Salihyah, occupied by the British as their farthest outpost on the upper Euphrates some 300 miles above Baghdad. He asked me to go there at once to photograph and record the paintings, that they might not perish and be lost to modern knowledge. As the British authorities had thus far thought it unsafe to allow our expedition to go up the Euphrates more than at most 100 miles, because the region was still a fighting zone, I

seized the opportunity with the greatest pleasure, but asked for a fortnight to be spent among the monuments on the Persian border first.

The Civil Commissioner then stated that if we went to Persia first we would be too late to save the paintings, for the reason, then strictly confidential and known only to the High Command, that the British frontier on the upper Euphrates (toward Syria and Faisal's kingdom) was to be drawn in about 100 miles farther down the river because of excessive difficulties in such a long line of transport communications. If we went to Persia first, the paintings would by that time lie out 100 miles beyond the British lines, and equally far in Arab territory; that is, they would be quite inaccessible on our return from Persia. It was evident that we must leave for the upper Euphrates at once.

I then asked the Civil Commissioner why it would not be possible, on completing our work at Salihiyah, to proceed up the Euphrates and then go on to Aleppo, thus *returning to the Mediterranean overland*, instead of coming back to Baghdad for the long return voyage via India and for the second time traversing the Indian Ocean and the Red Sea in order to reach the Mediterranean. The region was infested with Arab bandits, the tribes were in constant turmoil, and no white men had crossed from Baghdad to the Mediterranean for many months. The Civil Commissioner therefore replied that there was, of course, great risk, but that the probabilities were in our favor, for the Arabs would be in a genial frame of mind as a result of having recovered so much of the Euphrates Valley. I then asked the Civil Commissioner to telegraph to Salihiyah to Colonel Leachman, who had traversed the region several times in former years and had long been acquainted with the sheikhs of the tribes through which we would pass on our way to Aleppo, and to ask his opinion. Colonel Leachman replied the next morning, stating it was "probable" that the Chicago expedition could get through. The Civil Commissioner then agreed to furnish two of the seven automobiles we needed, provided the commander in chief in Mesopotamia, General Haldane, would give us permission to go, and the quartermaster-general, General Hambro, would furnish the other five cars. At a lunch with General Haldane I met

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both these gentlemen that same day and secured the needed permission as well as their consent to furnish the automobiles.

On Wednesday morning, April 28, our seven automobiles crossed the Tigris and, swinging out of the southern suburbs of Baghdad, left the Tigris and drove straight west on the first lap of the overland journey to and up the right (south or west) bank of the Euphrates. As the result of a broken bridge of boats at Fallujah we



FIG. 20.—OUR SEVEN CARS NEAR THE EUPHRATES CROSSING AT FALLUJAH (UPPER BABYLONIA) ON THE FIRST LAP FROM BAGHDAD TO THE MEDITERRANEAN

It was in this vicinity that the expedition was overtaken by darkness and obliged to spend the night in the open country among the same Bedwin who, a few weeks later, murdered Colonel Leachman.

were forced to undertake too long a journey for the first day (Fig. 20), and, although it was planned that we should arrive each night at a British post, we were obliged to stop short and spend our first night unprotected in the open desert with Bedwin camp fires visible all about us. A night or two later the same mishap occurred again. The British officials showed great anxiety on our behalf, though at the moment we observed no signs of danger. A few weeks later, however, Colonel Leachman, above referred to, was murdered by the Arabs in the vicinity of the spot near Fallujah where we had spent our first night in the open desert.

Accidents, breakages, and delays of desert travel were such that the 300-mile trip to the British frontier occupied an entire week.

The last day or two after leaving Anah we were convoyed, as we were passing points which were sometimes under Arab fire. General Cunningham, in command at Salihyah, received us most kindly; and, as his quarters were entirely full, Colonel Leachman had us set up our field beds in his office! Every possible kindness was shown us by the British officers along the entire journey. General Cunningham sent Luckenbill and myself for an air reconnoissance in one of his bombing planes, an experience which gave us valuable impressions of the desert and the Euphrates Valley.

The British withdrawal from Salihyah down the Euphrates was expected at once, and this left us only a single day, May 4, on which to make our records of the paintings. They occupied the walls of an ancient oriental sanctuary (Fig. 21) and proved to be of unusual interest and value. The British officer in command of the post, Major Wright-Warren, placed a body of Indian troops under a sergeant at my disposal to shift sandbags in order to lift the cameras to the proper level and also to make additional excavations (Fig. 22), that we might follow the ground plan of the building. In the course of these excavations we discovered additional paintings, among them a scene of Roman legionaries at worship, the easternmost representation of Roman troops ever found. Professor Luckenbill made twenty-four negatives of the paintings and of the ancient sanctuary containing them, and the young men made a ground plan of the structure, while I spent the day in making as full notes as possible on the paintings and inscriptions. I then suggested to the Major that the Indian troops he had given us might be set to work covering the wall paintings with rubbish again to protect them from destruction by the Arabs. He at once gave orders that this be done, and before the British left they were again safely buried.

As we afterward learned, the débris with which the paintings were then re-covered eventually settled as a result of heavy rains and exposed the heads of an entire row of eight figures. The result was that strolling Arabs, practicing the barbarous iconoclasm which they regard as prescribed by the Koran, smashed and disfigured all these faces. The only record of them in any state of completeness, therefore, remained in Luckenbill's photographs and my notes.

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When European scientists, especially Franz Cumont, saw these materials, the writer was requested to read an account of them before the French Académie des Inscriptions et Belles-Lettres in Paris. At



FIG. 21.—SANCTUARY CONTAINING THE WALL PAINTINGS IN THE GREAT ROMAN FORTRESS AT SALIHIYAH ON THE UPPER EUPHRATES

The building occupied a corner of the fortress, dropping sheer to a dry wadi into which its walls have toppled. The rubbish from the modern excavations, shot over the faces of the walls, can be seen at the right, lying at the angle of rest. The most important of the paintings occupy the left end of a transept, the wall of which (AB) is formed by the highest part of the fortress in the background of this view. The paintings date from the third century of the Christian era.

the same time a preliminary publication of this paper appeared in the French journal *Syria*.¹²

The elaborate notes which I had made on the colors were utilized first for the paper in *Syria*. After my return to America these, with some drawings and other notes on costume, made possible a full

¹² J. H. Breasted, "Peintures d'époque romaine dans le désert de Syrie," *Syria: revue d'art oriental et d'archéologie*, III (1922), 177-213.

publication of the paintings in color as a record of the first field work of the new Oriental Institute.¹³ The paintings proved to be the first of the oriental ancestry of Byzantine painting as yet found in the Near East. As a result of these revelations the writer was requested to undertake the excavation of Salihyah in association



FIG. 22.—BRITISH EAST INDIAN TROOPS EXCAVATING AT SALIHYAH UNDER THE DIRECTION OF THE CHICAGO EXPEDITION

These East Indians were placed at the disposal of the Oriental Institute expedition for the excavation of the ground plan and the clearance of an additional painted wall.

with his old friend Franz Cumont and the French Académie. Our Institute organization for field work was not yet in position to undertake any such plans; the excavation of the place was therefore relinquished, to be taken over by a combination of the Académie des Inscriptions et Belles-Lettres and Yale University under the leadership of Professor Rostovtzeff of Yale. The Greek inscriptions in the painting of the Roman soldiers which we discovered

¹³ J. H. Breasted, *Oriental Forerunners of Byzantine Painting* ("Oriental Institute Publications," Vol. I [Chicago: University of Chicago Press, 1924]).

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showed that the city was anciently called Dura. It proves to have been of Hellenistic origin. The task of excavating its remaining antiquities is still going on, with very important results.

I shall never forget our last night in the great fortress—a night spent in anxious realization that dawn would find us among hostile Arabs far outside of the British lines. As the British were about to retire *down* the river and we were to continue our journey *up* the



FIG. 23.— OUR DRIVERS AT SALIHIYAH ON THE SECOND LAP FROM BAGHDAD TO THE MEDITERRANEAN

The expedition shifted at Salihyah from its seven automobiles to five native wagons or *‘arabānahs*, two of which are seen above.

Euphrates, it was of course necessary to surrender our seven automobiles to General Cunningham. On the morning of May 5 we therefore shifted to five native wagons or *‘arabānahs* (Fig. 23). In these we drove northward out of the ancient fortress of Salihyah before dawn as the British were preparing to withdraw through the south gate. By the good offices of Colonel Leachman five Arab rifles of a neighboring friendly sheikh met us as we drove away and escorted us over no man's land into Arab territory. We thus left the British and committed ourselves with much misgiving to the protection of the new Arab state. In a few hours we were met by five other Arab horsemen, who had been sent by the Arab govern-

ment of King Faisal from Deir ez-Zor to meet us and relieve the local rifles who had first escorted us.

The wagon journey from the British frontier up the Euphrates (Fig. 24) and thence across to Aleppo occupied a week. It was an anxious, rough, and difficult week. The Arab officials showed the greatest friendliness toward us as Americans; had we not been Americans we should have stood little chance of coming through alive. We had much opportunity to meet the sheikhs (Fig. 25), and a deputation of officers of the Arab army called on me at Deir



FIG. 24.—OUR HORSES BEING WATERED AT THE EUPHRATES FOR THE LAST TIME, ABOVE MESKENAH, 'TWO DAYS' JOURNEY FROM ALEPPO

ez-Zor to send messages imploring assistance and advice from America. With appealing seriousness they voiced their need of guidance and counsel and their earnest desire for assistance from America. They were ready to give us all protection, and our chief danger lay in the roving bands of brigands infesting the country. Having passed through a region of numerous city mounds between Aleppo and the Euphrates, we rode safely into Aleppo on May 12. Thus an American expedition was the first group of white men or non-Moslems to cross the Arab state after its proclamation.

We had hoped that from Aleppo it would be possible to penetrate southeastern Asia Minor, but found this unfortunately quite out of the question. The Arabs hovering on the flanks of the French

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threatened to cut the railway south of Aleppo, and we were urged to leave for Beirut as quickly as possible. The conditions throughout Syria were very unfavorable for carrying out the archeological reconnoissance which we had hoped to make. It was, however, very



FIG. 25.—SHEIKH SUWAN OF THE SABKHAH ARABS ABOVE DEIR EZ-ZOR ON THE UPPER EUPHRATES

The sheikh is the second figure from the left. The head of a powerful group of Arabs, he made a very straightforward impression. He based great hopes on President Wilson and the fourteen points, knowledge of which had reached him even in this far-away Arab wilderness. His sturdy son, very proud of a new Mauser rifle, is the fourth figure.

important that as we went south we should inspect the ruins of Kadesh and Baalbek, two leading points between the Lebanons. I secured a letter from the Arab governor of Aleppo to the local authorities in the Orontes Valley, who furnished us with escorts. We were thus able, at considerable risk from the brigands north of Tripoli, to inspect the imposing city mound of Kadesh, an ancient Syrian fortified city on the Orontes (Fig. 26), in the excavation of



FIG. 26.—THE MASSIVE CITY MOUND OF ANCIENT KADESH ON THE ORONTES. VIEW FROM THE EAST

The modern name of the mound is Tell Nebi Manduh. It is nearly three-fifths of a mile long and 100 feet high. As usual in Syrian mounds, the buried citadel is at the north (right) end, which is noticeably higher. The mound is now surrounded by malarial marshes.

which the writer had long been deeply interested. The modern name of the place is Tell Nebi Manduh. The meandering course of the river has resulted in much flooded or water-logged marsh land, with pools of stagnant water, so that the region is seriously afflicted with malaria, one of the most difficult problems which field operations of the Institute have had to meet. It would be necessary to send a sanitary squad in advance to carry out some projects of hydrographic engineering and to drain the immediate region thoroughly before it would be safe to send in an expedition. This situation is especially regrettable in this particular case, because the monuments which this mound must contain are of fundamental importance and would undoubtedly furnish historical revelations of far-reaching value. After a visit at Baalbek, we reached Beirut on May 18.

Dr. Harold H. Nelson, a doctor of the Department of Oriental Languages at Chicago and at that time the head of the history department at the American University of Beirut, gave us a warm welcome and was of the greatest assistance to us in exploring the Phoenician coast. His institution gave him complete freedom from duty so that he could accompany us everywhere, and he became temporarily a member of the expedition. In motor cars we went up the Phoenician coast northward from Beirut as far as some 20 miles north of Tripoli, that is, to the northern end of Lebanon, where we were stopped by the depredations of brigands. Going southward from Beirut to reach Tyre and Sidon in the same way, we found the French authorities most friendly, as they had been notified of our coming, and they cordially responded to all requests for protection or assistance; but as we were about to leave Sidon and push on southward to Tyre, news came in that three men had just been shot by brigands a few miles out on this road, and the French commandant urged us to turn back. We were quite willing to comply.

While the turbulent conditions limited very disappointingly the extent of our Phoenician survey, nevertheless we secured many archaeological and topographical data and numerous photographs. Before sides a very satisfactory conference with M. Chamonard, who in charge of the French Department of Antiquities at Beirut, I had an interview with General Gouraud, the French high commissioner

governing Syria. I was at that time confident that any future archaeological work by our Oriental Institute in Syria would meet with cordial French support.

The journey by railway from Beirut to Damascus was without incident, but our stay in Damascus was very profitable and interesting. A letter from Lord Allenby to King Faisal procured me an interview with the new Arab ruler, and I afterward dined with the King in company with the American consul. I learned much of value for our future relations with this region in continuance of the work of the Oriental Institute. Our experiences included a session of the new Syrian parliament and an interesting conference with the president of this body, who called on us at our hotel. Two graduates of the American University of Beirut were members of King Faisal's cabinet. Besides these gentlemen we met a number of other educated Syrians who were members of the parliament. We listened with the greatest interest to their debates as they discussed the successive paragraphs of their tentative constitution. They gave me a copy of their Declaration of Independence, the first such document I had ever seen in Arabic.

From Damascus we made the journey through Palestine by rail. The route was directly across a disaffected region south of the Sea of Galilee, where the peaceful memories it suggested were somewhat disturbed by the sight of a brigand hanging from a telegraph pole beside the railway line. From Haifa we skirted by automobile the north side of the Plain of Megiddo, which was likewise rather unsafe. A stupid guide misled us so that we failed to reach Megiddo itself, although we could see the impressive mound a few miles away across the plain and discern what great opportunities for excavation still awaited the investigator there. We here had opportunity for studying the earliest great battlefield between Egypt and Asia—the scene of so many dramatic struggles between the nations that it has become proverbial as “Armageddon.”

At Haifa Messrs. Luckenbill and Nelson turned back to Beirut, for it had now become evident that our projected summer of exploration in Syria and Palestine would be quite impossible in view of the turbulent conditions. Professor Luckenbill busied himself at Beirut in developing our numerous photographic exposures, which

it was not safe to subject to a sea voyage back to America before developing. With the remainder of the party I went on to Jerusalem, where I had a series of valuable conferences with the British authorities, especially with Sir Louis Bols, commander in chief of the British army in Palestine, Professor John Garstang, director of the British School of Archaeology in Jerusalem, and Captain Ernest Mackay, then attached to the official department for the conservation of the ancient monuments. But even around Jerusalem the country was so unsafe that it was impossible to go out and inspect a ruin as near as the mound of Jericho in the Jordan Valley, practically visible from the Mount of Olives. We found that the ancient reputation of the road from Jerusalem to Jericho was richly deserved.

For the first time in my experience the journey from Jerusalem to Cairo was now possible by rail, following the line of march of armies between Africa and Asia for five thousand years. I traveled with General Waters-Taylor, head of the intelligence organization of the Imperial Staff. This offered opportunity for spending a very instructive day in conversation regarding Western Asia with one of the best informed men in British service.

Of our purchases in Western Asia one of the most important was a copy of the final version of the royal annals of Sennacherib (Fig. 27). In form this document is a six-sided prism of pale fawn-colored terra cotta, or baked clay, hard and firm and in perfect preservation. Six columns of beautifully written cuneiform fill the six faces of the prism, making a superb museum piece. In content it records the great campaigns of the famous Assyrian emperor, including the western expedition against Jerusalem on which he lost a great part of his army—a deliverance for the Hebrews which formed the supreme event in the life of the great statesman-prophet Isaiah. It is a variant duplicate of the Taylor Prism in the British Museum, but was written two years later (in 689 B.C.) under another eponym. The Institute prism was published in 1924, in company with transliterations and translations of all other historical and building records of Sennacherib, by Professor Luckenbill.¹⁴ Besides its scientific usefulness it forms an exhibit of primary value to our students and of unique interest to the public.

¹⁴ *The Annals of Sennacherib* ("Oriental Institute Publications," Vol. II).

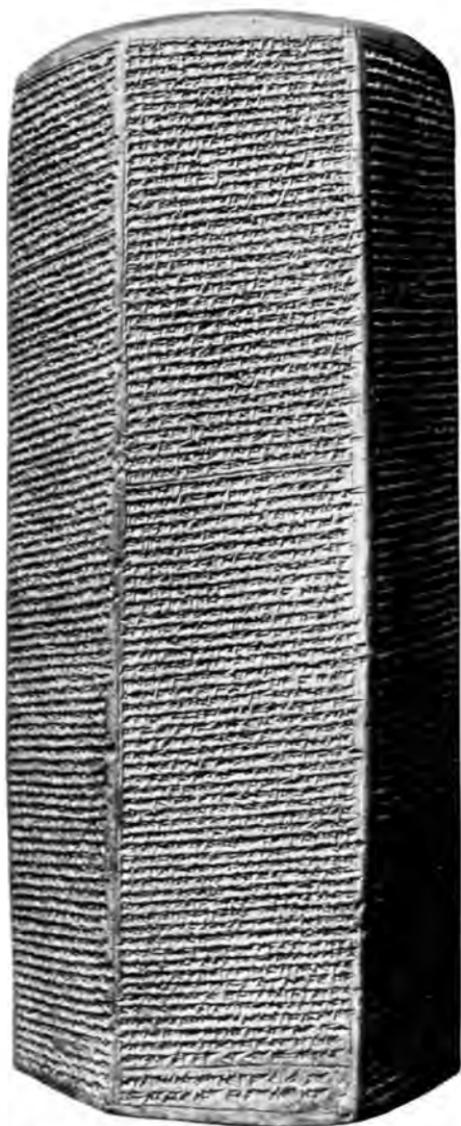


FIG. 27.—THE ROYAL ANNALS OF SENNACHERIB (SEVENTH CENTURY B.C.)

A hexagonal prism containing a cuneiform record of the western campaigns of Sennacherib, including the expedition against Palestine on which he lost his army, as narrated in the Old Testament.

Of other cuneiform documents our purchases comprised nearly if not quite a thousand tablets of varying content, including some that are literary and grammatical. Among works of art, besides two early Babylonian statuettes of copper, we obtained a series of beautifully cut stone cylinder seals, the best of which is one of the finest examples of lapidary sculpture yet found in Babylonia.

While in Baghdad I had accidentally learned of an ancient cuneiform record on gold which had been sent by a Baghdad owner to an obscure Paris dealer for sale. On my return via England, therefore, I seized the opportunity to run over to Paris for a few hours, and succeeded with some difficulty in locating the piece. It is a small tablet of pure gold, engraved on both sides with a cuneiform record of the restoration of the wall of Assur by Shalmaneser III (860-825 B.C.), accompanied by a summary of his great wars. It had presumably been deposited under the portion of the city wall rebuilt by King Shalmaneser, but the modern dealer knew nothing of the place in which it had been found. Among the Paris purchases also was a group of cuneiform records on clay, including royal annals of the Chaldean age and five very interesting tablets inscribed with archaic picture-writing, out of which the cuneiform grew up.

It ought to be mentioned here that it is impossible to gather *by purchase* in Western Asia collections of the wide range and remarkable volume possible in Egypt. It was obvious that expansion of our Asiatic collections would depend upon our contemplated excavations. The facts regarding prices of labor, the season when labor is free to leave flocks and fields, the possibilities for disposing of excavated rubbish—items of information essential to carrying on excavations at important points in Mesopotamia, Syria, and Palestine—were carefully collected.

The question of personal and official relations with controlling authorities was also given careful attention. We made the acquaintance of many officials of England and France now permanently stationed in the Near Orient, and as far as the regulations had been formulated we learned the conditions under which future work of excavation might be carried on in Near Eastern territory controlled by the two powers mentioned. The British civil commissioner at Baghdad, Colonel A. T. Wilson, assured me that an expedition of

the University of Chicago which might desire to excavate in Mesopotamia would be cordially welcomed. We also established connections with a number of sheikhs and natives of influence whose assistance would be indispensable in undertaking field work in Mesopotamia.

Not least among the results of the Asiatic expedition was the acquaintance with the archeological remains *in situ*, and thus likewise with the geography and topography of Western Asia, gained by members of the expedition. This knowledge was reinforced by a large series of photographs and plentiful field notes. An extensive series of maps, plans, and diagrams prepared by the British authorities to exhibit the geography, topography, and ethnology of Western Asia was also acquired.

On my arrival in Cairo Lord Allenby requested me to go to England to report to the British government the facts which had come under our observation in crossing the Arab state. Immediately on my arrival in England the Spa Conference called the Prime Minister away, so that I did not see him; but I reported in conferences with the other ministers, especially with the foreign minister, Lord Curzon, who was very cordial and to whom I had opportunity to express a sense of our great obligation for the generous support given our expedition.

The members of the expedition all returned home more deeply impressed than ever before with the fact that the Near East is a vast treasury of perishing human records, the recovery and study of which would require a comprehensive plan of attack as well organized and developed as the investigation of the skies by our impressive group of observatories, or of disease by our numerous laboratories of biology and medicine. The fast perishing records demand a far-reaching direct attack on the mounds covering the ancient cities and cemeteries whence the natives by illicit digging, which destroys as much as it brings forth, commonly draw the antiquities which they offer for sale. Furthermore, any ancient city with its streets, buildings, walls, gates, waterworks, drains, and sanitary arrangements is itself a fascinating and instructive record of human progress and achievement which must be studied, surveyed, and recorded.

CHAPTER III

THE EXPANSION OF THE ORIENTAL INSTITUTE: THE FIELD EXPEDITIONS

When the first field expedition of the Oriental Institute returned to America in the summer of 1920, the writer had been absent almost a year. Our immediate task was the installation of the newly acquired antiquities and monuments. In our building, which bore inscribed over its entrance the legend "Haskell Oriental Museum," two of the three floors, with a slight exception on the third floor, were occupied by the Divinity School. This occupancy of the building, originally intended to be brief and temporary, had been going on for twenty-four years; and the prospects for erection of a building for the Divinity School, which would release Haskell Oriental Museum for the uses for which it had been given, were not favorable. Only two small exhibition halls on the second floor were available for the whole Egyptian collection, and another on the third floor for the Asiatic monuments. In part of this limited space the materials acquired on the Institute's first expedition were installed for exhibition. Even under these unfavorable circumstances, the exhibition attracted much attention and stimulated increased interest in the work and purposes of the Institute. Here was tangible evidence of the value and possibilities of its work. The result was additional financial support from the founder, making it possible to expand the program of the Institute to undertake some of the projects which were felt to be the most pressing and important.

In planning the expansion our initial purpose was to gain a foothold in some form of field work which would establish the Institute permanently in the Near East. The foreign development of the Institute began in Egypt and then expanded to include Western Asia. Thereupon ensued the growth of the American headquarters and the activities of the home staff as a logical consequence of this foreign development. We shall therefore begin this account of the

growth of the Institute with its foreign expansion, in the course of which interesting accessory responsibilities devolved upon the Institute because of its mere presence in the Near East. If the reader will recall the survey presented in chapter i, he will realize the wide range and the vast extent of the operations necessary to make even a beginning in the colossal task of salvaging and interpreting the ancient evidences of man's early life still surviving in the Near East.

From the beginning the difficulties in the way of finding adequately trained personnel for staffing the field projects of the Institute were almost insuperable. Archeologists are not numerous.¹ Even in classical studies, so long established in our universities, chairs of classical archeology are rare. There is not a single chair of oriental archeology in the entire United States. Of the existent archeologists, whether classical or oriental, very few have ever had any extended field experience. It will be seen later (chap. xvii) that in the organization of the Assyrian Dictionary the Institute was obliged to build up an international staff. What was true of the Dictionary was still more true of the field organizations. Even in Europe there were relatively few archeologists possessing any extended training in field operations. The World War had deprived science of many of the most valuable men of this type in all the European countries. Out of an extended acquaintance among European archeologists the writer was therefore obliged to select our field directors in England, France, Germany, and Holland as well as America. In addition to the countries already mentioned, members of the various staffs have been drawn from Austria,

¹ Cf. the statement made in *Historical Scholarship in America—Needs and Opportunities; a Report by the Committee of the American Historical Association on the Planning of Research* (New York, 1932), pp. 50-51: "As we have noted above, our present need is men trained for work in the ancient field, notably in archeology, papyrology, and oriental history. Many of the best men tempted to enter this career do not proceed with it. One of the chief reasons for this is the fact that there is a scarcity of permanent, well-paid positions to which they can look forward. It is hoped that the development of institutes like the Oriental Institute in Chicago and the corresponding institute at Michigan will add an outlet to men looking for a career in ancient history, supplementing the outlets at present existing in universities, colleges, and museums."

Czechoslovakia, Denmark, Hungary, Italy, Norway, Palestine, Poland, Portugal, Russia, Sweden, Switzerland, and Syria. This situation has made the writer painfully aware of the Institute's heavy scientific responsibility for the training of a future generation of scientists. The realization of this purpose, so that we may carry on our great campaign and man our projects with young scientists trained in the lecture halls and seminars of American universities and especially of the Oriental Institute, is without doubt as important a responsibility as is the maintenance of the Institute's field operations.

Our realization of the extent of the need which it was hoped the Oriental Institute might help to meet made our first attempts seem very inadequate indeed. It was obvious, however, that at so early a stage in the development of the organization no extensive plans covering the entire Near East could be made. The circumstances dictated the method to be followed, which was quite clearly that of organizing an initial nucleus with a very specific and limited task, then, when this nucleus was once in efficient operation, gradually expanding by the successive addition of one new project after another until the limits of the final and inclusive program were reached. It was further quite clear that the beginning stages should include two projects, one dealing with each of the two great early civilizations—that is, one Egyptian, the other Assyro-Babylonian.

The physical situation of the two countries—Egypt and Babylonia—made it much easier to begin in Egypt. The Nile is much more accessible than the Tigris and the Euphrates. Egypt is a clearly circumscribed country, whereas Babylonia in its geographic situation interpenetrates all Western Asia. So it was clear that the new Institute should first establish itself in Egypt as a base and then gradually expand into Western Asia. Nevertheless, it was important that Babylonian civilization should be represented in the researches of the Institute from the beginning, even though we might not yet be able to begin operations on Babylonian soil.

In consultation with Professor Luckenbill it was agreed that for Western Asia an Assyrian Dictionary, based on all available cuneiform sources, was probably the greatest outstanding need. This vast project was therefore inaugurated in 1921 under his leader-

ship, and has been going on ever since. An account of its history, its transfer to the management of Professor Chiera after Professor Luckenbill's untimely death, and the development which has brought it a resident staff of sixteen people and a body of non-resident collaborators numbering twenty-six will be found in chapter xvii.

From a social structure which could create the awe-inspiring array of ancient monuments still visible along the Nile the ancient Egyptians gained profound human experience. The futility of such purely materialistic conquests as the Great Pyramid was borne in upon them by the visible decay of the earliest pyramids after a thousand years. Thereupon, having long discerned the inner values, the Egyptians attained a vision of social idealism and altruistic conduct. The literature that resulted had eventually a great influence on the religion of the Hebrews. A large body of documents throwing some light on this higher development is written with pen and ink on the insides of beautifully painted Egyptian coffins of some four thousand years ago (cf. Fig. 65). These documents, known to modern scholars as the Coffin Texts, were afterward largely absorbed into the Book of the Dead, which cannot be understood without a thorough study of the Coffin Texts. It was therefore decided that the first project of the Oriental Institute in Egypt should be the formidable task of copying the thousands of surviving lines of Coffin Texts and preparing them for publication. The project was begun under the joint editorship of Dr. Alan H. Gardiner, of London, and the present writer. The story of its progress until the completion of the arduous task of copying and the beginning of the slow process of publication will be found in chapter vii.

Further initial organization of Institute activities occupied the Director from the summer of 1920, when he returned from the first expedition, until the summer of 1922, when he left to work on materials in European museums for the purpose of editing and translating the extraordinary Edwin Smith Surgical Papyrus (cf. p. 410). He shifted to Egypt in the autumn of 1922 in order to make arrangements for beginning work on the Coffin Texts. While journeying through Upper Egypt on his return from the Sudan, the writer found at Aswan an invitation from Lord Carnarvon to stop

at Luxor and visit the tomb of Tutenkhamon, discovered just a few days previously. On the writer's arrival at Luxor Mr. Howard Carter, the discoverer of this tomb, requested him to furnish interpretations of the seals which had been impressed on the outer door of the tomb and also on the doors of the inner chambers. Mr. Carter afterward formally invited the writer to furnish the historical background of the discovery and likewise the historical interpretation of the materials discovered. These tasks, involved as they were in the progress of investigation of the contents of the tomb, somewhat interfered with the work on the Coffin Texts, for Dr. Gardiner likewise had been asked to share in the investigation, taking as his part the inscriptional material in the tomb; but the opportunity of participating in researches of such unparalleled interest was ample compensation.

A winter in Egypt had made it more and more evident that the Institute must possess headquarters on the Nile which would give it a more substantial base than a mere gallery in the Cairo Museum devoted to epigraphic copying. It was with this conviction that the writer returned to the Near East in the autumn of 1923. Preliminary to a second winter's work on the Coffin Texts, he visited Luxor in order to follow the progress of the Tutenkhamon situation. This immediate program was delayed by an attack of what was thought to be influenza, but was eventually recognized as malaria, evidently contracted in Syria. It confined the writer for five weeks to the Winter Palace Hotel at Luxor; and it was at this time, while sitting in a wheel chair in the beautiful gardens of the Winter Palace, that he dictated a plan of campaign for the development of an epigraphic survey of the temples of Egypt, to begin with the great Medinet Habu temple opposite Luxor. This preliminary draft he sent to his former pupil and old friend, Dr. Harold H. Nelson, then head of the department of history in the American University of Beirut. The correspondence thus opened led shortly to a conference with Dr. Nelson in Cairo, on the Director's invitation; and in the course of a few weeks the project was more definitely developed and Dr. Nelson's adherence secured.

Since the Institute possessed no architect, the Director drew the plans for the expedition field house himself. These he handed with

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full instructions to Mr. A. R. Callender, who had been superintendent in Mr. Carter's tomb operations. Arrangements were made with Callender for the erection, conveniently near the Medinet Habu temple, of a field house to contain living-rooms and work-rooms for an epigraphic expedition of three people: the field director, an artist, and a photographer. Institute activities were again seriously interrupted by the Director's appointment to take charge of negotiations between the Egyptian government and the heirs of Lord Carnarvon in an effort to settle out of court Carter's lawsuit for the restoration of the Tutenkhamon tomb concession, which had been revoked by the Egyptian government.

During the summer of 1924 Mr. Callender completed the field house for the staff of the Epigraphic Expedition which was about to begin work on the great temple of Ramses III at Medinet Habu opposite Luxor (Fig. 28). In October, 1924, the expedition moved into "Chicago House"; and on November 18 Dr. Nelson cabled three words: "Work began yesterday." It was to the writer a message which brought the greatest satisfaction; for, although beginning with a staff of only three people, he was firmly convinced that our epigraphic work would expand to a larger scale of operations, commensurate with the greatness and importance of our task and worthy of the precedents set by our predecessors. The colossal task of salvaging the written and sculptural sources of early Egyptian civilization had at last been resumed. The history of the Epigraphic Expedition will be found in chapter ix.

The season of 1924/25 in Egypt was notable in that it saw the representation of the Institute increased not only by the presence of the new Epigraphic Expedition but also by the arrival of Dr. Adriaan de Buck, whom the generosity of Mr. John Nicholas Brown had enabled us to appoint as Dr. Gardiner's assistant in the copying of the Coffin Texts in the Cairo Museum. The Institute thus had two efficient organizations at work in Egypt salvaging original written sources.

One of the most serious difficulties in attaching young scholars permanently to field expeditions has been the fact that long-continued field work involves complete separation from a scientific library. The staffs of such expeditions have heretofore been "scien-



FIG. 28.—THE NILE VALLEY AT THEBES AS SEEN FROM THE WESTERN CLIFFS

The great temple of Medinet Habu, now being published by the Institute, is seen at the extreme right. In the middle distance at the edge of the cultivation stands the first "Chicago House," recognizable by its dome, looking out between the Colossi of Amenhotep III across the Theban plain toward modern Luxor on the far side of the river. The Institute's new headquarters, completed in June, 1931, stand at left on the far bank just outside the picture (see Fig. 37). At the extreme left in the middle distance is another temple, the Ramesseum. This too the Institute plans to publish.

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tifically marooned." During the winter of 1925/26 the Epigraphic Expedition enjoyed a very pleasant visit from Dr. Abraham Flexner, of the General Education Board, who at once fully appreciated the difficulty just mentioned. At the same time another welcome visitor was Mr. Julius Rosenwald, of Chicago. Mr. Rosenwald was informed of the need for enlarging our living-quarters to accommodate new appointees on the staff, and likewise for housing a scientific library. He therefore generously consented to contribute the funds for the enlargement of the house and the erection of the needed library and office building. On Dr. Flexner's return to America his recommendations on our behalf were accepted by the General Education Board, which contributed funds for the purchase of the needed books and at the same time made an initial gift toward a permanent endowment for the maintenance of the Oriental Institute.

Preparations were at once begun for enlargement of the Luxor quarters and for erection of the library and office building. With the sole exception of the library, the four walls of which were of burned brick, the new buildings were constructed of sun-dried brick and were not intended to serve as the final headquarters of the Institute in Egypt.

With these new facilities it was possible to undertake the first expansion of the epigraphic work, in fulfilment of the hopes with which it had been begun with a staff of only three people. The Institute was now able to appoint three doctors of the Department of Oriental Languages and Literatures—Dr. Caroline Ransom Williams, Dr. William F. Edgerton, and Dr. John A. Wilson—as additional epigraphers, forming, with Dr. Nelson, the field director, an epigraphic staff of four people. It ought to be mentioned here with profound appreciation that Dr. Williams worked an entire season at Medinet Habu out of pure interest in the project and with almost no remuneration. At the same time an additional artist and a librarian were attached to the group. Since it had meantime become quite obvious that no adequate account of this temple could be confined to a reproduction of its reliefs and inscriptions, a new section of the Epigraphic Expedition was organized, an Architec-

tural Survey headed by Professor Uvo Hölscher, of Hanover, with a single assistant.

All was in readiness for the installation of the library and for the reception of the staff, thus enlarged by the addition of seven new members, in the autumn of 1926. As possessor of the first scientific library ever made available in Upper Egypt, the enlarged Egyptian headquarters of the Oriental Institute at Luxor then became a University of Chicago outpost where the training and development of advanced graduate students could be carried on while these young scholars were being equipped at the same time for permanent usefulness in field work. A means of training long hoped for by the writer (cf. pp. 66 f.) had thus become a reality.

The members of the staff at Chicago House were saddened, during the course of the season's operations, by the illness of John Hartman, our first field photographer in the Near East, and his sudden death on December 5, 1926. He had begun work with the Institute as photographer for the Coffin Texts project in 1922. His was the first, and thus far has been the only, death among the Oriental Institute personnel in the Near East.

During the winter of 1925/26 the Director had devoted much of his stay in Cairo to the organization of a new staff for carrying out a prehistoric survey made possible by a subvention from the General Education Board. Two outstanding problems in the career of prehistoric man have long awaited solution. One of these is the genetic and chronological correlation of the remains of prehistoric man in Africa with similar remains, geologically dated, in Europe. The same problem exists as between Western Asia and Europe. The second is the correlation of the enormously ancient—presumably very early Paleolithic—remains on the plateau of Northeast Africa with the earliest stages of human development on the alluvial floor of the Nile Valley. The writer was fortunate enough to find one of the ablest of the younger British geologists, Dr. Kenneth S. Sandford, of Oxford, already engaged in work along this line. Arrangements with him were finally perfected for carrying out a systematic survey of the traces of early man in Northeast Africa and in Western Asia, including a systematic effort to correlate these

remains with geological periods and, if possible, to find the leading types of flint implements in stratigraphic deposits. Preliminary preparations were made for the beginning of this work in the winter of 1926/27. The project was called the Prehistoric Survey Expedition (Fig. 29), with Dr. Sandford as field director. Mr. (now Dr.) W.



FIG. 29.—THE PREHISTORIC SURVEY IN CAMP AMONG THE GRAVEL HILLS AND SAND DRIFTS IN THE SAHARA DESERT WEST OF THE NILE BETWEEN SAKKARAH AND THE FAIYUM

J. Arkell, also from the department of geology at Oxford University, was appointed as his assistant.

Meantime it had become highly desirable that the Institute should undertake to establish itself at some strategic point in Asia. Again it seemed wise not to reach out as far as Babylonia but to keep the operations of the Institute as near together as possible in a compact nucleus. The new railway connection between Egypt and Palestine made it practicable to expand activities into that part of Asia in direct administrative combination with work in the Nile

Valley. The selection of a Palestinian site was determined by ancient international connections also. The powerful fortress city of Megiddo (Armageddon) had been held both by Egypt and by Asiatic powers for many centuries. It therefore seemed a wise choice to begin the Asiatic expansion of the Oriental Institute with the excavation of so strategic a site.

In June, 1925, Mr. John D. Rockefeller, Jr., agreed to contribute funds for the support of a five years' campaign of excavation at this ancient fortified city of Megiddo (Fig. 30), which commanded the pass through the Carmel Ridge leading from Egypt into Asia, especially to the Tigris and the Euphrates. The venerable stronghold is inevitably a treasury of ancient records and inscriptions, and important results have already accrued from the investigation which the generous support of Mr. Rockefeller has made possible at this site. This project marked the beginning of systematic and detailed field work by the Oriental Institute in Asia.

The services of Dr. Clarence S. Fisher were secured for the field directorship. Besides his two assistants, certain graduate students preparing for an archeological career were likewise added to the staff. The latter received no salary and entailed no expense to the Oriental Institute beyond their maintenance in the field. They were essentially graduate students of the University of Chicago at work in the field. The staff at Megiddo thus numbered five Americans and five native foremen. Plans were made for beginning the surface survey of the mound of Armageddon in August, 1925. The actual work of excavation began as soon thereafter as the season and the arrival of the equipment permitted.

In its excavation of the mound of Megiddo the Institute was confronted by a situation similar to that at Kadesh (p. 59). The famous "waters of Megiddo," referred to in the Old Testament, lay stagnant in the plain immediately below our expedition house, and the personnel suffered very seriously from malaria. A fuller account of this situation at Megiddo will be found in chapter xi. Suffice it to say here that Dr. Fisher's work was seriously hampered by several malarial attacks, aggravated by years of exposure to this maldy in the Near East. He was therefore made advisory director and was stationed at Ramallah, a modern town on much higher ground



FIG. 30.—THE PALESTINIAN MOUND COVERING THE FORTRESS CITY OF MEGIDDO (ARMAGEDDON) NOW BEING EXCAVATED BY THE ORIENTAL INSTITUTE

On the north terrace, at left of the mound, stands the expedition house

a few miles north of Jerusalem. Here, with the numerous excavations of Palestine easily accessible, Dr. Fisher was commissioned to devote himself to the preparation of a comprehensive, chronologically arranged corpus of Palestinian pottery. This fundamental piece of work, to be published by the Oriental Institute, will for the first time make the changing pottery forms of Palestine fully available as "index fossils" by which we may date the strata at Megiddo and elsewhere more precisely.

Mr. P. L. O. Guy, then acting director of the Palestine government's Antiquities Department, was appointed as Dr. Fisher's successor. Mr. Guy at once systematized the operations for combating malaria, and the expedition staff has since enjoyed good health. Facing a long campaign to complete the clearance of this great Palestinian mound, the Institute found it necessary in November, 1929, to begin the enlargement of the Megiddo Expedition's house. Plans for this new building were drawn by the expedition architect, Mr. L. C. Woolman, and the new construction was virtually completed by June, 1930.

The possession of a base in Palestine was exceedingly useful for the further expansion of the Institute in Western Asia. In order to understand this expansion it will be necessary to give some attention to the map (at end of volume). The most important early home of man in Western Asia is a borderland between the mountains of the Highland Zone on the north and the Southern Flatlands, which are largely desert. This borderland is a kind of cultivable fringe of the desert, a Fertile Crescent² with its open side toward the south. On the west it reaches the southeast corner of the Mediterranean, on the east it approaches the Persian Gulf, while its center, directly north of Arabia, has its back against the northern mountains. The western end of the Fertile Crescent is Palestine; Assyria makes up a large part of its center; and its eastern end is Babylonia.

This great semicircle, the Fertile Crescent, may also be likened to the shores of a desert bay upon which the mountains behind look

² There is no name, either geographical or political, which includes all of this great semicircle. Hence in his *Ancient Times* (Boston, 1916) the author was obliged to coin a term for it, the "Fertile Crescent." This term has since become current and is now widely used.

down—a bay not of water but of sandy waste, some 500 miles across, forming a northern extension of the Arabian desert. This desert bay, a part of the Southern Flatland, is a limestone plateau of some height—too high, indeed, to be watered by the Tigris and Euphrates, which have cut canyons obliquely across it. Nevertheless, after the meager winter rains wide tracts of the northern desert bay are clothed with scanty grass, and spring thus turns the region for a short time into grasslands. The history of Western Asia may be described as an age-long struggle between the mountain peoples of the north and the desert wanderers of these grasslands—a struggle which is still going on—for the possession of the Fertile Crescent, the shores of the desert bay.³

At Megiddo the Oriental Institute was operating at the western end of the Fertile Crescent. A program of any degree of completeness would necessitate the occupation of a series of points not only at strategic intervals along the Fertile Crescent itself, but also in the Highland Zone on the north. This zone, extending from the Aegean on the west to the Persian highlands on the east, has been occupied from the earliest times by round-headed peoples, among whom probably the most important were the Hittites. The recent decipherment of Hittite documents written in cuneiform on clay tablets—a decipherment accomplished by Hrozný and further developed by Forrer—has revealed a totally new world. It has disclosed to us the prehistoric Greeks centuries before they possessed any writing. We see them pushing over from the Greek mainland into Asia Minor—the irresistible prehistoric Greek expansion, revealed to us again in the records of the Medinet Habu temple, where the Institute is working in Egypt. Forrer believes that in these cuneiform tablets some of the hero kings of the Homeric songs are disclosed as historical characters; there is even a possibility that the name of Troy is found in these documents for the first time in a contemporary written source.

On the return of the writer to New York in April, 1926, the late Dr. Edward Robinson, at that time director of the Metropolitan

³ The foregoing description is drawn from the author's *The Conquest of Civilization* (New York, 1926), pp. 117-18.

Museum of Art, informed him of the availability of a young specialist in Hittite studies, Mr. (now Dr.) H. H. von der Osten, who had been assigned some special tasks in the Metropolitan Museum. Although in the budget no provision had been made for a Hittite expedition, the contingent fund, together with contributions from Mrs. Murray Crane and a fellowship from the Carnegie Corporation, made up a sufficient amount for the dispatch of a small expedition under the leadership of Mr. von der Osten to the center of the Hittite region within the great curve of the Halys River.

The results accruing from this first reconnoissance were encouraging and made obvious the desirability of systematic archeological research in the Hittite country for the further development of our knowledge of the important part played by Asia Minor in the earliest history of civilization, both Greek and oriental. Recognizing the fundamental importance of continuing this work, Mrs. Murray Crane, Mr. James A. Patten, Mr. Henry J. Patten, and Mr. Frank G. Logan each contributed to its maintenance. Besides these contributions the General Education Board in February, 1927, made an appropriation for five years' support of the work of the Hittite Expedition. From these resources the Hittite Expedition was in 1927 more fully outfitted, and the staff was increased to include, besides Mr. von der Osten as field director, Dr. Erich F. Schmidt as joint field director and chief of the excavations, a surveyor, and a field superintendent. An extensive mound at Alishar (Fig. 31), east-southeast of Ankara, was selected for excavation, in order to determine the sequence of cultures of early Anatolia, of which we had thus far only the most meager knowledge. An account of our work in Asia Minor will be found in chapter xii.

During its first year or two the program of the Institute had included little more than efforts to secure and instal new museum materials, principally by visits of its members to the Near East. But within its first eight years it had expanded to both Egypt and Western Asia and was engaged on a far-reaching and steadily growing program of research organized specifically in six different expeditions, each with its own personnel.



FIG. 31.—THE ANATOLIAN MOUND CALLED ALISHAR HÜYÜK, COVERING AN UNIDENTIFIED ANCIENT HITTITE CITY EXCAVATED BY THE ORIENTAL INSTITUTE

Work is seen in progress on the citadel. Around this central elevation lies a broad town terrace extending beyond the limits of the picture.

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Here at last was a substantial basis on which to build up the final program of the Institute, although that would require an annual budget of many times the income available at the end of its first eight years. Henceforward the program of the Institute was frankly directed toward a threefold objective: first, the establishment of a field expedition in every important cultural region of the ancient Near East; second, the maintenance by these strategically placed expeditions of racial, cultural, and anthropo-geographical researches; and third, the correlation of the resulting observations and discoveries as the lines of evidence converged on the centralized headquarters in America and furnished the basis for a comprehensive historical reconstruction of the course of early human development.

The Institute's program of additional research, including also publication and extensive building projects, now awaited two things: first, the requisite financial support; second, the scientific staff (cf. p. 66). With these provided, we should have before us unparalleled opportunities to contribute a new chapter and perhaps to prepare the way for a new epoch in the study of those stages and processes by which man first achieved and then developed civilization. The funds came first. The International Education Board in December, 1928, evinced its approval of the proposed program by voting the first of two substantial appropriations to the Oriental Institute (cf. p. 108). The writer's apprehensions then gave way to a sense of profound encouragement, which was eventually felt as strongly by the most distant Near Eastern outposts of the Institute as by its headquarters staff. The results summarized in the present survey reflect to no small extent the stimulating effect upon a scientific group of a future of assured financial support divested of anxiety.

The Anatolian researches had begun to contribute new evidences from the west end of the Highland Zone, uniting with the data coming from Megiddo, at the west end of the Fertile Crescent, to throw welcome light on the early cultures of the western portion of Western Asia (see map at end). It was now fundamentally important that our investigations should be extended farther eastward to include also the middle and eastern portions of the Fertile Crescent.

At this juncture, in 1928/29, through the generosity of Mr. John D. Rockefeller, Jr., the Institute was enabled to begin excavations near the middle of the Fertile Crescent in the palace of Sargon II at Khorsabad, 15 miles north of Nineveh in ancient



FIG. 32.—EXCAVATION OF THE WINGED BULL COLOSSUS DISCOVERED BY PROFESSOR CHIERA AT KHORSABAD

The great body lies prostrate. Only the forelegs, from which it had been broken away, are still in position. Professor Chiera stands beside them.

Assyria. Dr. Edward Chiera, who was intrusted with the leadership of this expedition, conducted a brilliantly successful excavation of a portion of the palace, uncovering an important series of valuable sculptures. An account of the installation of the bull colossus discovered here by Dr. Chiera (Fig. 32) will be found with the description of the new Oriental Institute building on pages 112-14; his excavations are summarized in chapter xvi.

Further extension of field researches to the eastern end of the Fertile Crescent and of the Highland Zone was vital to any comprehensive investigation of the development of early man. The strategic importance of this eastern arena of the Persian highlands and the lower valley of the Tigris and Euphrates cannot be overestimated. The most important pass leading down through the Persian mountains to the Fertile Crescent issues directly opposite the point where the Tigris and Euphrates come closest together. Through this pass, which now bears the name of Kermanshah, the traffic caravans of the east have for ages reached the Fertile Crescent. For thousands of years it has been the main highway of the nations, connecting East and West. It was on the lofty rock wall overlooking this pass that Darius carved his mighty monument of Behistun, that all the nations marching by might look up and behold this splendid proclamation of his power; and it was past this monument and through this pass that Alexander marched into Persia and destroyed the empire which Darius had so impressively proclaimed.

The district where the road through this pass crosses the Fertile Crescent and the Two Rivers is the greatest historical nexus in Western Asia. Here grew up a series of no less than six powerful cities, each of which was a great center of empire: Kish, Akkad, Babylon, Seleucia, Ctesiphon, Baghdad—an imposing succession of imperial cities reaching back five thousand years. In one sense they were the creation of the Kermanshah road at its junction with the Fertile Crescent and the Two Rivers. It had long been the desire of the writer to see systematic research operating in the region of this junction, especially in the territory along the great Kermanshah highway on the east side of the Two Rivers between the rivers and the Persian mountains. The subvention voted by the International Education Board in December, 1928 (see p. 108), brought welcome opportunities of expanding Institute researches in Iraq and elsewhere, not least the possibility of undertaking a concession to no less than four ancient cities in this strategically important region.

When it became apparent that the Institute would be working not only in ancient Assyrian territory but in Babylonian as well,

the name of the Assyrian or Khorsabad Expedition was rendered more inclusive by changing it to the "Iraq Expedition." The need of Dr. Chiera's valuable services both for teaching and for the development of the work on the Assyrian Dictionary (see chap. xvii) made unavoidable his retention in Chicago. Hence Dr. Henri Frankfort, formerly head of the Egypt Exploration Society's expedition at Tell el-Amarna in Egypt, was appointed field director of the Iraq Expedition.

Dr. Frankfort arrived in Iraq on December 23, 1929. Following instructions from Chicago, he applied to the Iraq government for a concession in southern Iraq (ancient Babylonia) including a group of four city mounds at and near a point called Tell Asmar (Fig. 33), east of the Tigris and some 50 miles by road (though only half that far as the crow flies) northeast of Baghdad (see map at end), in that intermediate region, between the mountains and the Two Rivers, the strategic importance of which we have been emphasizing. Dr. Chiera had already observed that in that vicinity the natives were carrying on illicit digging. The available field staff was divided between Khorsabad in the north and the four city mounds near Tell Asmar in the south—an arrangement which makes it possible to shift with the weather from south to north as the season advances and the heat drives the southern staff northward. In this way the Iraq Expedition gains a considerably longer working season with only a slightly increased overhead expense. This new arrangement, contemplating a campaign extending over some ten years, necessitated the erection of a field headquarters building, the plan of

FIG. 33.—THE ANCIENT BABYLONIAN CITY OF ESHNUNNA, THE RUINS OF WHICH ARE NOW CALLED TELL ASMAR, BEING EXCAVATED BY THE IRAQ EXPEDITION

Tell Asmar House, the headquarters of the Iraq Expedition, is visible on the right (south) in this air view. The two "arrows" which pierce the corners of the main excavation are the excavators' light railway embankments of accumulating rubbish, terminating at their outer ends in spreading dumps. The "pockmarks" or "shell holes" to the left were made by illicit native diggers before the Oriental Institute received its concession to clear the mound. In the Akkadian buildings which are being uncovered at the left (north) have been found various objects evidently imported from the Indus Valley, among them a cylinder seal showing an elephant and a rhinoceros (see Fig. 182).



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FIG. 33

Royal Air Force Official

which comprises three adjoining rectangles surrounding three courts in style reminiscent of old Assyrian architecture. During that portion of the winter most favorable for digging in the vicinity of Tell Asmar the building will serve as general headquarters for the excavation of the above-mentioned four sites. Plans for it were drawn by the expedition's two young architects, Messrs. Seton H. F. Lloyd and Gordon Loud, while actual construction was superintended by Mr. P. Delougaz, another member of the expedition. Tell Asmar House (see Figs. 175-76) was completed by the autumn of 1930.

At Khorsabad in Assyria Dr. Frankfort continued Dr. Chiera's excavation of Sargon II's famous palace and residence city. In the modern village a native dwelling which had been rented the year before by Dr. Chiera was further rehabilitated and transformed into a field house.

The Western Asiatic operations of the Institute, beginning at Megiddo in Palestine and at Alishar in the Hittite country of the Highland Zone, had for several seasons been confined to the west. The eastward expansion to include Sargon's Assyrian capital at Khorsabad, together with the four sites in Babylonia, gave the Institute an important position in the eastern half of the Fertile Crescent. Nevertheless, two gaps were still left in the strategic distribution of our Western Asiatic expeditions as a group. These gaps were in Syria, in the western half of the Fertile Crescent, and in Persia, in the eastern half of the Highland Zone.

The interpenetration of the Mediterranean Sea and Western Asia has always made the eastern end of the Mediterranean a region of fundamental importance in culture evolution in the ancient Near East. Many evidences point to the interfusion of Western Asiatic and Mediterranean cultures. It has long been realized that the presence of the clay tablet in early Greek and Cretan life demonstrates the existence of a connection with the neighboring Hittite cultures of Asia Minor and ultimately with Babylonia. The whole problem of the history of writing in the eastern Mediterranean area is highly complicated, and much light would undoubtedly be thrown upon it by the decipherment of the Cretan tablets discovered by Sir Arthur Evans and a determination of their relationship to the Hittite civilization. By arrangements with the Greek

government and Sir Arthur Evans it proved possible to dispatch Dr. Emil Forrer to Crete, where he copied the tablets in the museum at Candia and also made a large series of photographs of these materials. In this connection the Institute endeavored to begin researches in the island of Cyprus also. The desired concession was granted at once. The laws of Cyprus, however, afford private owners somewhat overgenerous rights of litigation, and it soon transpired that the owners of the desired site at Amathus were demanding exorbitant prices for their land. The interminable negotiations which the law permitted became an impossible obstacle, and the Institute withdrew without any further effort.

The neighboring coast of Syria has always had important connections with Mediterranean civilization because of its numerous harbors. Palestine, on the other hand, with a harborless coast was thrown back on inland connections. In order to study the interfusion of Mediterranean and Western Asiatic influences, it has been important from the first that the Institute should investigate some Syrian site not too far from the coast. Such a site is further of peculiar significance because it will enable the Institute to recover the civilization of the Hittite intruders who invaded the Fertile Crescent at the northeast corner of the Mediterranean and seized the conquests of the Egyptian Empire in this region. It is of still further importance because of the fact that it is in the region in which Hittite hieroglyphic inscriptions may be expected.

Dr. Emil Forrer, who had been intrusted with the proposed operations in Cyprus, was able to undertake some explorations in southern Asia Minor and Syria in connection with the whole range of Mediterranean problems in which the Institute is interested. One of his journeys of geographical exploration in the southern and eastern Hittite country included North Syria. His report to the Director made it appear highly probable that the mound known as Chatal Hüyük (Fig. 34), in the valley of the Afrin River, a tributary of the lower Orontes, west of Aleppo, is to be identified as the important ancient city of Calneh, referred to by the Hebrew prophets Amos and Isaiah as one of the powerful western enemies of Assyria.

Eventually the executive secretary of the Institute was dis-



FIG. 34.—THE NORTH SYRIAN MOUND WHICH PROBABLY COVERS ANCIENT CALNEH OF THE BIBLE

In the foreground flows the Afrin River. The mound beyond, called today Chatal Hüyük, halfway between Aleppo and Alexandretta, has an area of about 35 acres. Together with a neighboring mound called Tell Jedeideh, it is being excavated by the Oriental Institute's Syrian Expedition.

patched on a reconnoissance in the same region, where he found a second mound, of almost equal size and importance, known as Tell Jedeideh, only a short distance from Chatal Hüyük. M. Seyrig, director-general of the Department of Antiquities in the French government at Beirut, very cordially assured us that the Institute would receive a concession to these sites on application. Negotiations were at once begun for gaining control of the land needed, including not only the two sites but also enough territory to furnish space for the indispensable "dumps." The executive secretary also compiled a report on sanitary conditions in the neighborhood, with especial reference to malaria, water supply, etc. The road connections are excellent; Chatal Hüyük lies directly on the automobile highroad to Alexandretta. Local building conditions were found to be satisfactory, and in 1931 Mr. Richard A. Martin was dispatched as acting field director to begin the construction of an expedition house.

M. Claude Prost, who had charge of the antiquities in the sanjak of Alexandretta as an official of the government's Department of Antiquities, was appointed field director of this expedition. His staff was drawn as far as possible from the personnel of the Anatolian-Hittite Expedition, an arrangement permitting savings in traveling expenses. This group is, moreover, already intimately familiar with the archeology of Hittite civilization and fully acquainted with the practical problem of carrying on excavations among a Turkish population. M. Prost's associates included also Dr. N. C. Debevoise, of the Iraq Expedition, and Mr. P. M. J. Bardin, a fellow of the Institute. We confidently look for important new light from these Hittite investigations in Syrian territory. Our hopes are the more likely of fulfilment in view of the fact that the Syrian country made far more plentiful use of cuneiform records than did Asia Minor. There is every possibility, therefore, that the Syrian Expedition will uncover cuneiform tablets of historical importance, besides new monuments bearing inscriptions in Hittite hieroglyphic. Actual excavation in Syria began November 1, 1932.

The Syrian-Hittite Expedition filled the last gap in Institute investigations along the Fertile Crescent. In the winter of 1930/31 the Institute was able by the organization of a Persian Expedition

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to fill the remaining important hiatus, that at the eastern end of the Highland Zone. For many years the French government had enjoyed an archeological concession in Persia which excluded all other nationalities. The Persian government, however, eventually canceled this concession and thereupon adopted a new antiquities law, in the formulation of which Professor Ernst E. Herzfeld, of the University of Berlin, was very influential. This law assures the excavating organization a half share in all the antiquities discovered, except in the case of national monuments of outstanding or unique importance. Professor Herzfeld cabled to the Director of the Institute, announcing the passage of this law and urging American action. The writer at once cabled to Herzfeld instructions to ask for an option on a concession to excavate Persepolis. By unanimous vote the Persian cabinet granted not an *option* but the concession itself, the first concession under the new law, to the Oriental Institute.

At that time the Institute did not possess funds for undertaking the concession, which entitled us to excavate and restore the magnificent palaces of Persepolis. In course of time, however, funds for the clearance, and to some extent the restoration, of the Persepolis palaces were provided by a benefactress who desires to remain anonymous. Her pledge, making possible the dispatch of the first American scientific expedition to Persia, was received while the executive secretary was engaged in a reconnoissance of the Syrian-Hittite region. It was necessary to cable him at Beirut to return to Baghdad, whence he had just come after making an inspection of the Iraq Expedition, and to undertake the organization of the new Persian Expedition.

After completing his preliminary examination of our new Syrian-Hittite sites the executive secretary therefore proceeded southward to Gaza in southwestern Palestine and flew thence by Imperial Airways first to Baghdad and then to Bushire, the port of Persia, on the Persian Gulf. There he had arranged by radio to meet Professor Herzfeld, who was at the time serving in Teheran as archeological adviser of the Persian government. At the Bushire conference the preliminary negotiations were completed, and Professor Herzfeld accepted appointment as field director of the new

Persian Expedition. In the spring of 1931 Herzfeld began the clearance of the Persepolis palaces (Fig. 35). An account of the work of his first two seasons will be found in chapter xiv.

In 1929 the Institute had passed its first decade. It was an auspicious decennial and proved to be the greatest year in the entire history of the organization. Shortly after the developments mentioned on page 81, in January, February, and March of 1929 the writer was privileged to accompany Mr. John D. Rockefeller, Jr., on a journey up the Nile and through Palestine and Syria. His generous and enlightened interest profoundly affected the subsequent program of the Oriental Institute in both Egypt and Asia. As a result of his visit to the Near East Mr. Rockefeller became greatly interested in the magnificent ancient Egyptian wall paintings still surviving in certain of the tombs and temples along the Nile. After mature consideration he expressed a desire to support three new Egyptian projects, the purpose of which would be to preserve these beautiful examples of ancient Egyptian art for posterity through the medium of a group of folio volumes to appear in the "Oriental Institute Publications" series. The projects are:

1. *Davies-Gardiner paintings*.—Dr. Alan H. Gardiner, who had long been associated with the Oriental Institute as editor of the Coffin Texts project, had been for some time partially financing Mrs. Nina de Garis Davies in her preparation of noteworthy color copies of the ancient paintings found in the tombs of the Theban necropolis. Through the additional support pledged by Mr. Rockefeller, Jr., in January, 1930, the enterprise is now being carried through on a much larger scale in a publication of about one hundred and fifteen color plates, many of which are already printed (see pp. 224-28 and Plate I, frontispiece).

2. *Temple of Abydos*.—The Egypt Exploration Society of England found itself in need of additional support for its project of copying the painted reliefs of the temple of Seti I at Abydos, the most beautiful relief paintings in Egypt (see Pl. II). This project was in charge of Miss Amice M. Calverley. In this instance Mr. Rockefeller offered to contribute an amount sufficient to enable the Egypt Exploration Society to continue its work somewhat more rapidly by the addition of a photographer and a draftsman, and



FIG. 35

designated the Oriental Institute as his representative in disbursing the funds for the completion of the project, as well as in editing and producing the color plates in a joint publication of the Egypt Exploration Society and the Oriental Institute.

3. *Sakkarah mastaba paintings*.—The magnificent colored wall reliefs in the masonry tombs at Sakkarah (the cemetery of ancient Memphis), on the west bank of the Nile some 14 miles by road from Cairo, have never been appropriately published. These relief paintings not only represent the earliest great chapter in the art of painting in historic times, but also form the earliest surviving graphic revelation of developing human life in industry, agriculture, animal husbandry, family life, and social and administrative organization. Mr. Rockefeller therefore desired to include these in his generous support. Thereupon Professor Prentice Duell, of the department of art and archeology at Bryn Mawr, was called to the Oriental Institute to become field director of the new expedition at Sakkarah (Fig. 36). Professor Duell, the author of an outstanding volume of reproductions in color of Etruscan tomb paintings, is an artist of exceptional ability. Under his direction and authorship the Institute plans to produce a series of color plates and black-and-white drawings in at least five folio volumes of facsimiles adequately preserving the great treasury of relief paintings in the Memphite cemetery.

With the establishment of these three new Egyptian projects and of its expeditions in Iraq, Syria, and Persia the Oriental Institute's comprehensive program of investigation and correlation of the various civilizations of the ancient Near East was for the first time in full operation. Each of the Institute's six Asiatic expeditions, one at each end of the Highland Zone and four on the Fertile

FIG. 35.—AIR VIEW LOOKING NORTH ACROSS PART OF THE GREAT PALACE TERRACE AT PERSEPOLIS

The palaces of the Persian emperors, burned by Alexander the Great, are now being excavated and restored by the Oriental Institute. The vast terrace wall at the left is in places 50 feet high. In the right-hand foreground are the tents of the expedition, used before its members moved into the harem building of Darius the Great (partially visible at the extreme right) after excavating it. Two great many-columned audience halls (*C* and *D* on the plan, Fig. 163) are seen in the center.



FIG. 36.—NEW HEADQUARTERS BUILDING OF THE SAKKARAH EXPEDITION AMID THE PALM GROVES ON THE SITE OF ANCIENT MEMPHIS

Crescent, has its own task of investigating a particular civilization and its related cultures. The Institute should ultimately be able to combine the evidence obtained by all its Asiatic and Egyptian expeditions into an impressive synthesis of human development such as has not heretofore been attainable by a single institution. What is to be attempted is, of course, a reconstruction of the human advance, which may be viewed from a number of aspects. It will be necessary to refer to the map at the end in order to understand these relationships—racial, cultural, and geographic.

In Western Asia the genetic and chronological sequence in the development of civilization is not yet as clear as it is in Northeast Africa. We now discern that in large terms there is in the northern part of Western Asia what may be called a "Highland civilization," occupying the Highland Zone extending from the Aegean eastward and southeastward to Persia. South of that zone lies the great Semitic world; between are smaller groups of adjacent cultures. We have already seen (pp. 77-78) that all these cultures met and commingled on the Fertile Crescent. The once teeming cities and towns of the ancient peoples who at various times occupied the hills and valleys of Western Asia from Anatolia to Persia are now reduced to silent mounds beneath which are buried, among other treasures, great archives of cuneiform tablets. Certain kinds of written evidence, especially cuneiform tablets when they have been fired in an oven so that they become pottery, are better preserved in Asia than in rainless Egypt. The process of salvaging these Asiatic materials has still been hardly more than begun.

We must bear in mind, however, that behind the historic age of writing, represented primarily by cuneiform records but also by vast bodies of archeological evidence, there lies another period of many thousands of years of prehistoric development which must be investigated by the Prehistoric Survey Expedition. Eventually, therefore, the Institute will shift its Prehistoric Survey from the Nile to the Tigris and Euphrates. Meanwhile, study of the human career in Western Asia has not yet progressed far enough to disclose any geologically dated sequence of development such as the Institute's Prehistoric Survey has found in Northeast Africa.

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It is now possible to put together a conspectus which ranges side by side in series the social and political stages of human development and the Institute projects engaged in the investigation of those stages. Three main periods are evident:

- A. Prehistory
- B. History of civilization: the rise and development of *nations*
- C. History of civilization: the rise and development of *empires*

The conspectus would read as follows:

Stages of Human Development	Oriental Institute Projects
A. Prehistory	
Earliest human evidences down to fourth millennium B.C.	Prehistoric Survey, Persian Expedition, Megiddo Expedition, Anatolian Expedition
B. History of civilization: the rise and development of <i>nations</i>	
1. Earliest advance in control of the material world	
a) Earliest pictorial representations of human activity, including agriculture, animal husbandry, society, and government, in Northeast Africa	Sakkarah (Memphis) Expedition
b) Development of material life and government in Western Asia	Iraq Expedition (Babylonian Section), Anatolian Expedition, Persian Expedition
2. Earliest advance in the realm of human conduct and mind	
a) Dawn of conscience and sense of social responsibility	Coffin Texts
b) Initial steps toward inductive science	Edwin Smith Surgical Papyrus
c) Earliest art in the historic age	Sakkarah Expedition, Iraq Expedition (Babylonian Section)
3. Earliest advance in business and economic life	

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Stages of Human Development

Oriental Institute Projects

- a) Creation of earliest commercial and economic world
- b) Origin of business practices and their documentary forms

Assyrian Dictionary, Iraq Expedition

C. History of civilization: the rise and development of *empires*

1. Egypt: the Egyptian Empire

a) Political history

- (1) Historical records of the great Theban temples: Karnak, Luxor, Ramesseum, Medinet Habu (emergence of Europe)
- (2) Historical records of the great Abydos temple of Seti I

Epigraphic Expedition

- (2) Historical records of the great Abydos temple of Seti I

Abydos Expedition (jointly with Egypt Exploration Society)

b) Art and architecture

- (1) Paintings of the great Theban cemetery
- (2) Paintings of the great Abydos Temple of Seti I
- (3) Temple and palace architecture of Medinet Habu

Davies-Gardiner Paintings

- (2) Paintings of the great Abydos Temple of Seti I

Abydos Expedition (jointly with Egypt Exploration Society)

- (3) Temple and palace architecture of Medinet Habu

Architectural Survey

2. Western Asia: historical records, art, and architecture

- a) Hittite Empire and connections between the ancient Near East, the early Mediterranean, and pre-historic Europe

Anatolian Expedition

- b) Assyrian Empire: excavation of the palace of Sargon II at Khorsabad (8th century B.C.)

Iraq Expedition (Assyrian Section)

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Stages of Human Development	Oriental Institute Projects
c) Babylonian Empire: excavation of the city of Eshnunna (now Tell Asmar) and three neighboring cities	} Iraq Expedition (Babylonian Section)
d) Chaldean Empire	
e) Persian Empire	Persian Expedition
f) Palestine and the Hebrews: excavation of the city of Armageddon (Megiddo)	Megiddo Expedition
g) Roman Empire	
(1) Forerunners of Byzantine art: preliminary excavation at Salihiyah (ancient Dura)	Preliminary Reconnaissance Expedition
(2) Syriac Christianity	Peshitta
3. Civilization of Islam	
a) Moslem wisdom: animal fables	Kalilah wa-Dimnah

This is an ambitious program which should be carried on for centuries, if all the evidence is to be salvaged and studied. In considering the future of this work it is well to emphasize the fact that field research has been going on in Egypt for more than a century, nor may we expect that another century will see the evidence exhausted.

The Institute's policy of making a complete and exhaustive record of every site excavated involves elaborate architectural surveys. In the earlier years it had been as difficult to secure young Americans to undertake this work as to find American archeologists (cf. p. 66) for the field staffs; but, in view of the certain future resulting from assured support, the Oriental Institute gradually embarked upon a program of training promising young graduate architects by participation in its field expeditions. Through such practical training in the field and further specialized study these

young men have already developed the ability to handle successfully not only the problems presented by ancient architectural remains but also the general conduct of field expeditions.

The careful recovery of every surviving piece of evidence from an ancient site demands slow and painstaking effort. The registration of such evidence requires an elaborate and carefully developed system.⁴ The excavation of an important site, therefore, may and usually does require a long term of years. For this reason the Institute began the erection of suitable headquarters' buildings in the field, including those already mentioned, to house its staffs and to provide working facilities and storage-rooms. The character of these buildings varies widely according to the climate; the locally available building materials, and the probable duration of each expedition's field operations. The rigorous conditions of field work demand a reasonable measure of comfort for the staff of each unit; but the extent to which this can be provided must be gauged by each expedition's probable period of occupation of a given site, by the length of its working season, and by the size of its staff. Upon completing its campaign at any one site, the Institute presumably will always transfer its attack to another; the investment in temporary field houses must therefore be kept at a minimum.

But permanent headquarters abroad are also needed. Two countries of Europe (France and Germany) with archeological expeditions working in Egypt have long enjoyed the advantages of permanent headquarters buildings in Cairo, supported by the home government and affording their expeditions permanent centers for the study of field results, for the pursuit of special researches, for the accommodation of visiting scientists, for the maintenance of an archeological library, for the storage of field equipment, etc. It is an extraordinary fact that the British government, for over half a century politically dominant in Egypt, has not founded such an institution there.

The Oriental Institute's largest expedition in Egypt, in fact the largest of all its field units, is the Epigraphic and Architectural

⁴ The methods now employed by the Institute in these processes, as practiced by the Megiddo Expedition, are fully explained in chapter xi.

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Survey Expedition, which began work in 1924/25. In the space of five years the expedition house, with its original staff of three including Dr. Nelson, had grown from fifteen to nearly eighty rooms all told, with a European household of some twenty-five people. The Institute's work in Egypt during these five significant years had proved itself a permanent thing. It therefore became necessary to plan for a building which should not only house this particular expedition but serve as general headquarters for all the Institute's projects in Egypt, supplanting the old "Chicago House."

Enabled to act by a generous guaranty proffered by Mr. John D. Rockefeller, Jr., the Institute in 1929 arranged for the purchase of a site of three and one-half acres facing the Nile on the east bank in the northern suburbs of Luxor near the great Karnak temple. This location was desirable since the Institute anticipated extending its work to the enormous body of inscribed records on the east bank. The plans for the new headquarters were prepared by Messrs. L. LeGrande Hunter and L. C. Woolman, two young architects who had joined the Institute on July 1, 1929, after their graduation as honor men from the University of Pennsylvania School of Architecture. On the new site ground was broken in May, 1930. Mr. Hunter was made architect in actual charge of the construction, which was completed in June, 1931.

This permanent Egyptian headquarters (Fig. 37) is constructed of burned brick, concrete, and steel, in California-Spanish style, harmonizing particularly well with the semitropical vegetation at Luxor. There are three units. A building containing the library (now numbering five thousand volumes), offices, studies, and drafting-rooms is connected by an arcade with the second or residence building, which serves as living-quarters for the staff. Each of these buildings contains a court or patio. The third unit is a group of outbuildings at the rear containing the garage, darkrooms, workshops, generator plant, laundry, and servants' quarters. Two tennis courts have been laid out, and the grounds have been embellished, especially by the planting of trees. The Egyptian government has recently expropriated part of the Institute's land in front of its new buildings for a riverside boulevard to connect the town of Luxor with the main entrance of the great Karnak temple. The



FIG. 37.—THE PERMANENT EGYPTIAN HEADQUARTERS OF THE ORIENTAL INSTITUTE, SEEN FROM THE NILE

Institute's entire property is surrounded by an inclosure wall. A portion of the old headquarters on the west bank will be retained for supplemental use until the work at Medinet Habu has been completed. The reader will find the new and permanent Egyptian headquarters illustrated in detail in chapter ix.



CHAPTER IV

THE EXPANSION OF THE ORIENTAL INSTITUTE: THE AMERICAN HEADQUARTERS

MUSEUM AND ADMINISTRATION

It has long been the writer's belief that exhibition of typical examples of the monuments and documents acquired by the Oriental Institute is an essential element in visualizing the oriental beginnings of the career of man. The exhibition of such research materials accomplishes a number of things. Such collections are an invaluable aid to instruction, whatever the age of the students. Whole periods of man's activity can be so presented through original objects, models, and pictures as to make them very much more vivid, real, and understandable. In this way it is possible to interest in-

FIG. 38 (HEADPIECE).—SCULPTURE ON THE FRONT OF THE NEW ORIENTAL INSTITUTE BUILDING

The relief sculpture shown above, occupying the tympanum over the entrance, is intended to suggest the transition of civilization from the ancient Orient to the West.

telligent students and lead them to enter this field of research—a result to which increasing attention should be given. Such collections serve also as a real attraction to the friends of the University in the Chicago community and reveal to such friends both the nature of the materials and the character of the problems with which the Oriental Institute is concerned. Its exhibits thus make clear to the outside world the early periods of human development and the necessity for research in order to penetrate and to recover the history of the human mind. To see them chronologically arranged is like looking down a vista of milestones marking the long road over which we have passed and indicating the process by which we have become what we are.

Behind the story of the Oriental Institute at this point lies that of Haskell Oriental Museum. In 1894 the late Mrs. Caroline E. Haskell presented to the University of Chicago funds for an oriental museum building as a memorial to her husband, Mr. Frederick Haskell. It was intended that the building should house the Departments of Comparative Religion and of Semitic Languages besides furnishing exhibition space for the antiquities which it was expected that the University would acquire. But from the opening of Haskell Oriental Museum in 1896 until 1925 the building was occupied by the Divinity School also. As a result there was never sufficient space for adequate exhibitions in addition to the teaching and library requirements of these various units of the University.

Nevertheless, a small public museum was maintained in which were shown objects from both the Far and the Near East. The Near Eastern collection, based on a nucleus purchased by the writer in Egypt in 1894/95, was increased chiefly by acquisitions obtained in return for contributions by Chicago citizens to the Egypt Exploration Fund (now Egypt Exploration Society) and to Sir Flinders Petrie's Egyptian Research Account (now the British School of Archaeology in Egypt). The collection ceased to grow when excavations stopped during the World War. Soon after the armistice the first expedition of the Oriental Institute took up the task of assembling a well balanced museum collection (cf. p. 37). An exhibition of the chief objects purchased during that expedition

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was opened May 20, 1921. Meantime it had become apparent that the entire Orient was too wide a field for an academic museum. The interests of the Institute have from its inception, as explained in earlier chapters, been limited to the Near East.

By 1925 the broadening scope of the Oriental Institute's activities had made it impossible to house its scientific and administrative work in the limited space available. At this juncture the new building of the Divinity School was completed, and during the winter of 1925/26 the Institute was able to take possession of the entire Haskell Oriental Museum building and to remodel it. The Far Eastern collections, of importance for the Department of Comparative Religion, were then turned over to the Divinity School and installed in Swift Hall.

It was an event of real significance in the history of the Oriental Institute when on December 9, 1926, the collections and scientific projects housed in Haskell Oriental Museum were once more formally thrown open to the public and the building was visited by a large group of friends of the University. On this occasion we were able to exhibit larger and more representative collections than ever before of ancient Egyptian, Babylonian, Assyrian, and Hittite monuments. The exhibits, fully labeled, were installed in cases of types evolved from the best museum experience and especially built for us in the workshops of the Art Institute of Chicago.

Even then, however, the materials exhibited formed only a part of the museum collections acquired both before, and especially after, the organization of the Oriental Institute. In their entirety these Near Eastern collections constituted a body of evidence of fundamental value in the study of the rise of civilization. They consisted primarily of original, basic documents for the researches of the Institute, which is gradually amassing a body of such materials, as well as of data based on original sources, which will contribute to the production of a history of early civilization more fully documented than has heretofore been possible (cf. p. 95). Together with the materials still retained at the Institute's various field headquarters, the collections would have filled a building far exceeding in size the available museum.

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Notwithstanding the fact that the Institute was now occupying the entire Haskell Oriental Museum building, the space available was still, therefore, sadly insufficient. The Director called attention to this dilemma in his report to the University for 1926/27. Again in his report for the following year the Director was obliged to enlarge on the same theme, as follows:

The rapid growth and expansion of the various Institute projects and the resulting additions to the collections of Haskell Oriental Museum have rendered the building so completely inadequate as to make it imperative for the present writer to devote a large part of his time and effort to evolving and presenting a plan for the future of both the Museum and the Oriental Institute. Much of the Museum's valuable collections, all the new acquisitions from the Institute's Megiddo Expedition, and a large part of the objects from the Hittite excavations in Asia Minor are at present stored in their original packing-cases owing to lack of space in Haskell Museum. Even the storage space is approaching exhaustion and will hardly suffice for the new finds expected from Egypt. With insufficient office space for either the teaching staff or the administration, without a single classroom or lecture hall, with serious lack of room for research work, with entirely inadequate exhibition halls for the display of its newly acquired materials from the field, with library space completely exhausted and students standing for lack of table room in the library, the Institute's present position is little short of a catastrophe.

During the past year, therefore, the present writer has elaborated plans for insuring permanent support of the Institute and also for securing the funds to erect a new building. These plans have included the gradual creation of a maintenance endowment to carry on the numerous Institute projects both at home and abroad and to provide in each instance for the full publication of the scientific results.

Throughout the years since the establishment of the Museum, and subsequently of the Institute, the Director had had until 1926 only one assistant in administrative work. Dr. T. George Allen, one of our own doctors, had been appointed secretary of Haskell Oriental Museum in 1917 and secretary of the Oriental Institute at its inception in 1919. It had, however, become necessary for Dr. Allen to devote more and more of his time to teaching and then to the growing volume of publications, and the Director had found that so small a staff could no longer cope with the administrative

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work of the Institute. The business papers massed on the Director's desk were excluding the claims of science.

It was the friendly solicitude of Raymond B. Fosdick and the generosity of John D. Rockefeller, Jr., which transformed this difficult situation. Beginning July 1, 1927, the administrative staff of the Oriental Institute was expanded to include Mr. W. L. Hurst as financial secretary and Mr. Charles Breasted as assistant to the Director and later as executive secretary. Following the growth of the field operations the financial records of the Institute finally surpassed *one* man's ability to cope with them, and in 1932 Mr. Hurst was given an assistant in the person of Mr. Eldridge Pond. The officers appointed in 1927 formed the first nucleus of an adequate administrative staff. The assistance of such a staff meant a new epoch for the Director, whose time had been increasingly absorbed by letter-writing, accounts, and other clerical tasks.

The expansion of field operations and home researches greatly increased the responsibility of the Institute for publication. As early as the summer of 1926 the Director had laid out a program of publication, which continued to grow as the field operations expanded. Even at this earlier stage of the Institute program it was found that to complete the publication of volumes already planned would involve a subsidy of over \$100,000. The program was therefore submitted to the General Education Board with an appeal for an initial subvention of \$50,000 toward its fulfilment, such a grant to constitute a revolving fund which would be more or less replenished as the publications were sold. In November, 1926, the Board generously voted this subvention. It thus became possible to organize the Institute's publication operations more systematically. On July 1, 1927, Dr. Allen became editorial secretary and assumed the more immediate charge of putting Institute publications through the press.

With the advent of the new administrative officers and their secretaries, the totally inadequate facilities in Haskell Museum, where no central administrative office space was available, still more seriously hampered efficient work and would soon have crippled the growth of the Institute. At the same time the lack of permanent support rendered all arrangements temporary. The

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writer has therefore to report on the outcome of the efforts described above to meet the growing needs of the Institute.

In December, 1928, the International Education Board voted a substantial appropriation to the Oriental Institute to provide a new building on the campus, a teaching endowment, and additions to the annual budget of the Institute. Following the visit of Mr. Rockefeller, Jr., to the Near East early in 1929 (see p. 91), the same board voted a supplementary appropriation to make further provision for the support of field research, to enable the Institute to erect permanent buildings as headquarters in several foreign fields, and also to provide for the full and complete publication[†] of the results of its researches. These gifts would enable the Institute (1) to erect a spacious new building on the Chicago quadrangles, (2) to call to the University an additional group of able scholars, and (3) to develop further the program of research in the field, including additional expeditions in Assyria and Babylonia (see pp. 82-86).

THE NEW ORIENTAL INSTITUTE BUILDING

Immediately after the announcement of the first of these gifts, preliminary preparations were made for the erection of the new headquarters building in Chicago. With the co-operation of the Board of Trustees a site at the southeast corner of University Avenue and Fifty-eighth Street was chosen, in the same block with the University Chapel. Mr. E. B. Jackson, the University's consulting architect, enthusiastically entered upon the task of drawing up preliminary plans. Mr. Murray, of the Goodhue Associates, designed the building. The plans were finally completed late in February, 1930. By that time the deepening business depression enabled the University to let contracts for a more extensive building than the available appropriation would have made possible in normal times. Because of the nearness of the Chapel, the new Institute building was planned to harmonize with it externally; and all care was taken to preserve for the Chapel its dominant position on the quadrangles. The new building is so designed that future growth of the Institute can be accommodated by the erection of additional

[†] Subsequently underwritten by the General Education Board.

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halls toward the south without disturbing the unity and symmetry of the whole.

In April, 1931, a year after breaking ground for its new Chicago headquarters, the Institute was able to begin the occupancy of its new home (Figs. 39-41). It was now possible for the first time to house the researches and to develop the work of the Institute on a scale commensurate with its enlarged staff and its growing program.

BASEMENT AND MAIN FLOOR: PREPARATION AND INSTALLATION
OF ORIGINAL MONUMENTS

Probably no branch of the Institute's work had more sorely needed the new space and the new conveniences than its growing collections of original monuments and documentary sources. The new basement magazines, equipped with long rows of locked steel storage cupboards, are being filled with antiquities large and small. Some of these have recently come in from the field; others had been lying in the basement of Haskell Museum for several seasons. As soon as the new building was ready, 129 boxes which had been in storage in the old building and even under the grand stand on Stagg Field were moved into the new storage space. The task of unpacking these boxes was of course considerable, involving a large amount of checking against field lists and, at the same time, the making of new accession lists for the files of the Institute.

For the first time also the Institute now possesses adequate workshops and equipment (Fig. 42) for the repair, restoration, preservation, and recording of antiquities. In the shops the monuments are made ready for installation as museum exhibits or for storage in the new metal cupboards. The chief preparator, Mr. Herbert P. Burtch, has been with the Institute since 1921. Four photographic laboratories make possible the speedy preparation of photographic records of every new accession. The photographic equipment, including full provision for operating with powerful electric light, is elaborate and complete. One room is devoted to large-scale photostatic work and to printing. A press equipped with all requisite fonts of type permits the Institute to print all its own labels. Most of the photostatic work and printing is done by Mr. J. R. Daniels.

The actual task of installing new monuments after they have



FIG. 39.—THE NEW ORIENTAL INSTITUTE BUILDING, SEEN FROM THE NORTHWEST

The results of the Institute's field operations, extending from Turkey through Syria, Palestine, Iraq, Persia, and Upper Egypt, are gathered for exhibition, study, and publication at this scientific and administrative headquarters building. Five exhibition halls and a lecture hall occupy the ground floor. The other floors are devoted to administration, teaching, and research. The basement contains shops, photographic laboratories, and storage facilities.

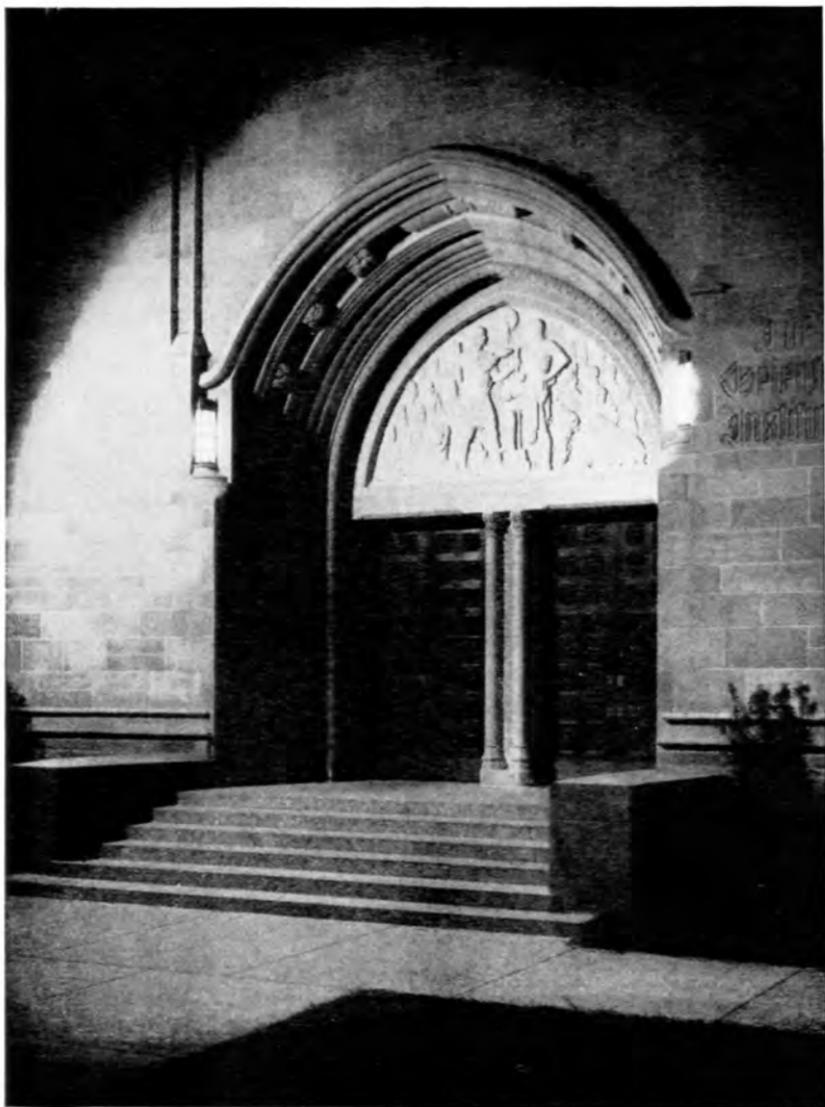


FIG. 40.—THE NEW ORIENTAL INSTITUTE BUILDING. NIGHT VIEW OF THE MAIN ENTRANCE

The sculpture in the tympanum is illustrated in Figure 38

passed through the hands of the preparators, the photographer, and the accession staff (cf. p. 115) is sometimes a formidable undertaking. The greatest difficulty was encountered in the installation of



FIG. 41.—THE LOBBY OF THE NEW ORIENTAL INSTITUTE BUILDING, LOOKING FROM THE LECTURE HALL TOWARD THE MAIN ENTRANCE

The lion terminals of the stairway balustrades are copied in stone from Assyrian originals.

the massive Assyrian bull discovered by Professor Edward Chiera in the palace of Sargon II at Khorsabad (see p. 366). This monument weighs altogether over forty tons; it is 16 feet high and slightly over 16 in length (cf. Fig. 43). It was, of course, far too large to be brought into the building through any door or window, and no floor



FIG. 42.—THE NEW ORIENTAL INSTITUTE BUILDING. A CORNER OF THE PREPARATORS' SHOPS IN THE BASEMENT

of the building could support a burden of over forty tons at any one point. It was necessary, therefore, to leave a large temporary hole in the east wall of the Egyptian hall. Through this opening the monument was introduced into the building; it was then installed on its own concrete base, with its own foundation, disengaged from the actual structure of the building so that any danger of unequal settling was avoided. Several skilful "riggers," with the assistance of Sig. Donatello Bastiani, an Italian sculptor-craftsman trained in Mr. Lorado Taft's studio and now a member of the Institute staff, were intrusted with the erection of the monument—a task which occupied them about three months. They were then, after a short interval, shifted to the erection of relief sculptures from the same Khorsabad palace.

During these operations the mechanical equipment of the building demonstrated its efficiency for such work. On the east side of the building there is a concrete landing platform alongside a 12,000-pound freight elevator by which all heavy monuments can be lowered into the basement. Here a trolley rail suspended from the ceiling extends the length of the shops and makes it possible for a single workman to shift stones weighing several tons to any part of the shops. The wall sculptures occupied the "riggers" during the entire summer of 1931. Since then Sig. Bastiani has spent much time in fitting together several other large Khorsabad reliefs which had been badly shattered (see Fig. 196).

Our acquisition of sculptures from the Khorsabad palace is an event of importance not only in the history of the Oriental Institute, but likewise in that of the art collections of America. The great bull, which the Assyrians seem to have called *kârîbu* and the Hebrews *krâbh* (our own word "cherub"), is the largest such monument ever taken out of an Assyrian building. Furthermore, as a work of monumental sculpture, especially as an embellishment of architecture, it is a very fine example of Assyrian art. Though the wall reliefs mounted in the alcoves of the Assyrian hall are inferior to the great bull in workmanship, there is no such *varied* series of Assyrian wall sculptures available in any other American institution.

With regard to the exhibition cases for the museum halls, it

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should be noted that for the equipment of the old halls of Haskell Oriental Museum from \$12,000 to \$15,000 had already been invested in approved and standardized cases which could be shifted to the new building. These cases furnished almost enough installation space for the entire Egyptian hall. The furniture and equipment fund for the new building was to meet the heavy cost of all the additional cases needed throughout the exhibition halls. These five halls (Figs. 43-46) occupy most of the ground floor (Fig. 47). They are distributed as follows: Egyptian hall, north side of court; Assyrian hall, east side of court; Babylonian hall, south side of court; Hittite-Syrian-Palestinian hall, west side of court; Persian-Moslem hall, southwest corner of the building.

MAIN FLOOR: THE LECTURE HALL

In connection with the educational and scientific use of these exhibition halls by the public, the Institute hopes to arrange for a series of popular lectures each season, to be held in the lecture hall (Fig. 48). This room, together with the Persian-Moslem hall (Fig. 46), forms the west side of the new building. It seats 272 persons and is equipped with every modern device to assist in the graphic illustration of scientific lectures, including automatic curtains for daytime darkening and a concrete projection chamber (over the entrance) with openings for four instruments: two cinemas, including sound-attachment, and two still-life projectors. Here the Institute will hold talking "movie" lectures showing its field operations.

SECOND FLOOR: ADMINISTRATION, RESEARCH, TEACHING,
LIBRARY, AND PUBLICATION

The basement and all the ground floor of the new building except the lecture hall are, as explained above, devoted to the original monuments and other exhibitional materials in the collections of the Institute. On the second floor a suite of five convenient rooms, well equipped with file cases and storage cupboards, is occupied by the clerical and scientific staff charged with the administration, accessioning, and cataloguing of these museum objects. Dr. Watson Boyes was appointed secretary of the Oriental Institute Museum in



FIG. 43.—THE NEW ORIENTAL INSTITUTE BUILDING. THE EGYPTIAN HALL
The winged Assyrian bull at the far end marks the transition to the Assyrian Hall



FIG. 44.—THE NEW ORIENTAL INSTITUTE BUILDING. ENTRANCE TO THE BABYLONIAN HALL

1929, succeeding Dr. Edith Williams Ware (appointed in 1926), who has become a research associate of the Institute. The files of



FIG. 45.—THE NEW ORIENTAL INSTITUTE BUILDING. THE HITTITE-PALESTINIAN HALL

photographs and stereopticon slides are in charge of the museum assistant, Miss Teresa Ferster.

Offices across the corridor on the north side of the building are occupied by members of the teaching staff. Here they carry on their own personal researches. Each of these rooms is large enough



FIG. 46.—THE NEW ORIENTAL INSTITUTE BUILDING. A CORNER OF THE PERSIAN-MOSLEM HALL

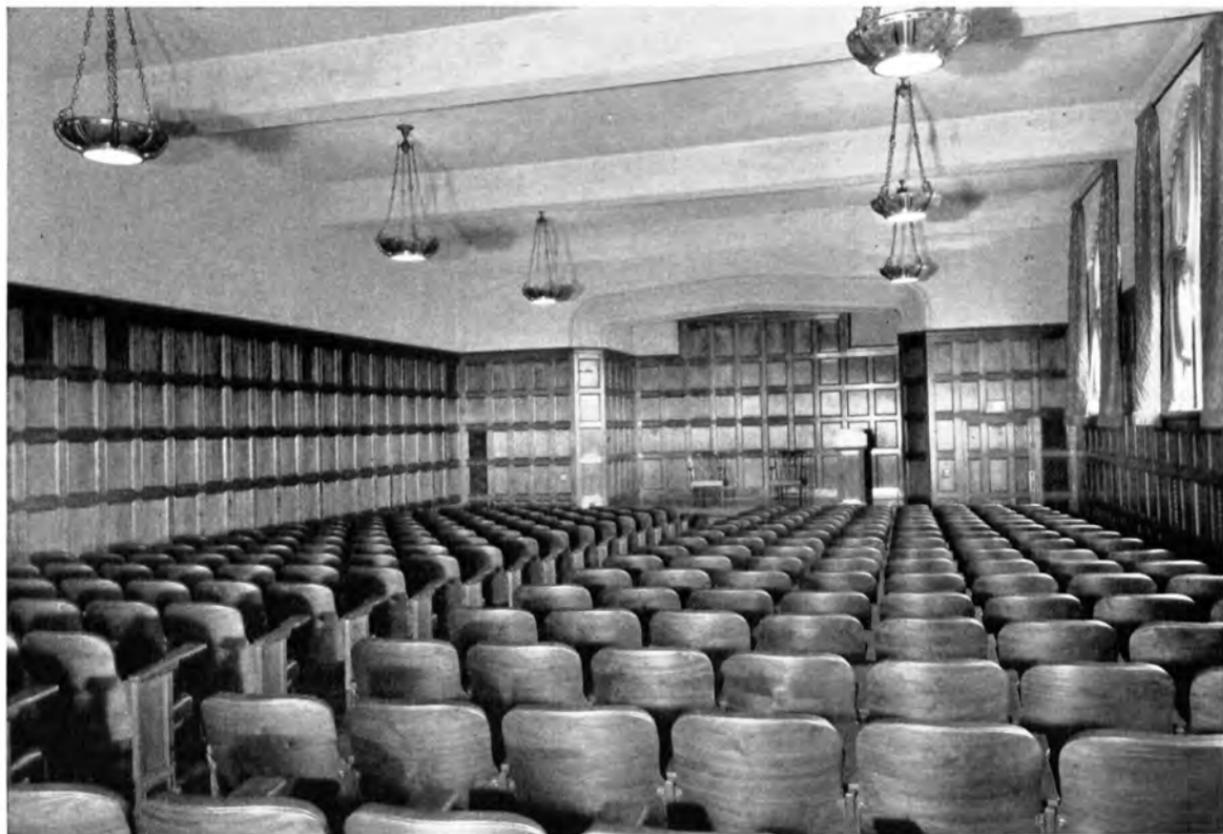


FIG. 48.—THE NEW ORIENTAL INSTITUTE BUILDING. THE LECTURE HALL

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so that the occupant can also assemble his research students around a table for seminar work. Small classes likewise meet in these rooms. Though for this reason it was unnecessary to equip the Institute building with a large number of rooms to be used exclusively for classes, two attractive classrooms are available.

The east wing of the second floor is devoted wholly to the general administrative group, with which is included the research associate, Dr. Ware. The staff of the Director, whose study is shown in Figure 49, is headed by his assistant, Miss Jean M. Roberts. His quarters and those of the executive and financial secretaries and their staffs have now for the first time been able to expand into a series of rooms where the administrative records of the Institute may be properly filed and conveniently found.

The most beautiful room in the building is the library reading-room (Fig. 50) in the west wing, where for the first time the entire specialized group of books representing the field of research with which the Institute is concerned is conveniently accessible. In addition to their regular duties the librarian, Miss Johanne Vindenas, the cataloguer, Miss Asgerd V. Skjönsberg, and the staff assistant, Dr. Margaret Boell, are carrying forward the analytical catalogue described on pages 402-3. The space now in use will probably house the growing Institute library for ten years to come. When the available stack room is exhausted, it will be possible to expand it considerably by the absorption of some of the study rooms (on the third floor) at present assigned to holders of Institute fellowships.

The editorial work involved in the Institute's extensive series of publications must necessarily be accommodated in rooms adjacent to the library, since the editing requires constant consultation of published sources and frequent checking of references. The editorial secretary and his assistants are now provided with sufficient office space and a full equipment of the indispensable tables, files, and other furnishings without which their work had so long been hampered in the old building.

The new building also offers social opportunities which were not possible under the cramped conditions prevailing in the old building. A common room for social relaxation has been arranged at the east end of the second floor, where committee meetings, depart-



FIG. 49.—THE NEW ORIENTAL INSTITUTE BUILDING. THE DIRECTOR'S STUDY



FIG. 50.—THE NEW ORIENTAL INSTITUTE BUILDING. THE LIBRARY

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mental conferences, and social gatherings of Institute members find an atmosphere of informal attractiveness which the Institute has heretofore lacked.

THIRD FLOOR

Besides library stacks, the third floor of the Institute building provides spacious accommodation for the Assyrian Dictionary project, which needs a large amount of room. Additional offices and study rooms for the Institute staff, quarters for the Peshitta project (p. 419) and the Kalilah wa-Dimnah project (p. 423), and a group of rooms for Institute fellows occupy the remainder of the third floor.

The process of taking possession of the new building was necessarily slow. The longest and most difficult initial task was the installation of the monuments and original sources in the exhibition halls. It was not until December 5, 1931, that this work had reached such a stage that the building could be ceremonially opened to the public. At the opening exercises President Robert Maynard Hutchins presided, and addresses were delivered by Dr. John H. Finley, associate editor of the *New York Times*, Raymond B. Fosdick, and the present writer.² The exhibition halls were then thrown open to guests and friends of the University.

Very greatly to the surprise of all members of the Institute, widespread public interest was manifested from the first day. Within little over half a year after the opening of the building more than fifty thousand visitors had passed through its exhibition halls. The situation in this respect proved to be embarrassing, for a great many of these visitors came in companies representing clubs, educational institutions of all sorts, school and college classes, social organizations, etc. These groups usually telephoned to arrange for dates when they might be personally conducted through the exhibition halls. The secretary of the Museum was heavily and unexpectedly burdened with such responsibilities and had to be given assistance by other members of the Institute. A handbook descriptive of the activities of the Institute was issued on the opening

² These addresses were published in the *University Record*, XVIII (1932), 1-16.

day, and a little later a brief summary guide to the Museum was also placed on sale. For the accommodation of visitors an information desk, in charge of Mrs. Alice Miller, has from the first been maintained in the lobby.

But all these provisions, however well intended, were totally inadequate. A solution of the difficulty which will probably relieve the staff from some of this responsibility for conducting visiting groups is without doubt to be found in the use of a talking movie. The Institute is at present engaged, under the management of the executive secretary, in the preparation of a sound-picture—a movie lecture—which may be heard several times a day in the lecture hall of the Institute. Visitors who have heard this lecture will then be able to visit the galleries and inspect the exhibits much more intelligently than would otherwise be possible.

TEACHING AND RESEARCH

The teaching endowment contributed by the International Education Board enabled the Institute to supplement the long existent staff of the old Department of Oriental Languages in the University of Chicago by calling to its ranks other scholars in oriental science who serve both as teachers and as collaborators or directors in research. There is thus gradually being built up at the Institute a body of orientalists engaged in a concerted effort to study the earliest evidences of developing human life and thus to draw back the veil which still obscures the earliest history of man. The teaching endowment has already brought to the staff of the Institute the following scholars: Professor William F. Edgerton, one of our own doctors of philosophy and for several years a member of the Institute's Epigraphic Expedition at Luxor; Dr. Emil O. Forrer, of the University of Berlin, as associate professor of Hittite for the three years ending in 1932; Professor A. T. Olmstead, formerly of the University of Illinois; Professor Arno Poebel, formerly of the University of Rostock; Dr. Arnold Walther, from the Vorderasiatische Abteilung of the Staatmuseen in Berlin; and Dr. John A. Wilson, another of our own doctors of philosophy and also for several years on our epigraphic staff at Luxor.

Somewhat earlier the staff of the Assyrian Dictionary (see p. 390)

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contributed to the instructional group Dr. F. W. Geers, another doctor of philosophy of the University of Chicago. With these seven new men the Institute now has a teaching and scientific staff in which all the important cultures of the ancient Near East except that of Persia are represented. A professorship of archeology and field methods also finds place in the plans of the Institute.

The distribution of the teaching staff of the Institute, combined with that of the Department, is at present as follows:

Oriental History

Professor A. T. Olmstead

Oriental Archeology

Not yet appointed

Hebrew and Old Testament

—³

Professor William C. Graham

Professor William A. Irwin

Egyptology

Old and Middle Egyptian

Assistant Professor John A. Wilson

New Egyptian, Demotic, and Coptic

Associate Professor William F. Edgerton

Assyriology

Assyrian

Professor Edward Chiera

Assistant Professor F. W. Geers

Sumerian and Akkadian

Professor Arno Poebel

Hittitology

Assistant Professor Arnold Walther

Arabic, Aramaic, and Syriac

Professor Martin Sprengling

The new permanence of Institute activities becomes fully apparent only when one realizes that the duties of the new teaching staff include the task of developing a new generation of scientists to

³ Vacancy left by the recent death of Professor J. M. P. Smith.

carry on the work. In order adequately to meet this serious responsibility for the future of oriental studies, there is included with the teaching endowment a fellowship fund providing ten annual fellowships. On the income from one of these fellowships a young doctor of philosophy may live comfortably while widening his experience and equipping himself for a teaching post. Oriental science has heretofore not been so secure as to be able to offer to the student both the training to fit himself for scientific endeavor and also the opportunity of engaging, when he is so fitted, in permanently supported field research.⁴ If the researches of professors or fellows demand actual field work in foreign countries, the Institute has available a fund for traveling expenses also.

The development of the publication program, by which the results of researches both at home and abroad are made available to the scientific world, has been indicated on pages 107-8 and 122. Its work is described in chapter xix.

⁴ Cf. p. 66, n. 1.

CHAPTER V

THE PREHISTORIC SURVEY

One of the fundamentally important field problems demanding attention by the new Oriental Institute was the investigation of prehistoric man, the determination of the geological conditions prevailing at the time of man's earliest emergence, and the collection of evidence revealing his prehistoric advance. It had long been evident to the writer that the problem of the appearance of man and of his earliest development in the Near East was inextricably involved in geological conditions. The study of the problem and the detection of the surviving evidence, therefore, would require a trained geologist, particularly one who had specialized in recent and surface geology but at the same time was in general acquainted with prehistoric archeology. Such a partly geological, partly archeological investigation was the more necessary because of the fact that our knowledge of the geological history of the Nile Valley was astoundingly imperfect and incomplete. Indeed, until very recently it has been uncertain whether the geological origin of the Nile Valley must be regarded as having been due to erosion or to a great double fault and the subsidence of a huge block. The geologist now recognizes that the Nile Valley owes its origin to a long process of erosion. It is now possible to put our finger on a stage of this process and to say "at this point man arrived in the Nile Valley."

In 1881, over fifty years ago, General Pitt-Rivers discovered flint artifacts imbedded in a gravel terrace deposited on the west side of the Nile near the mouth of the Valley of the Kings' Tombs, opposite Luxor.¹ Paleolithic flint implements had often been observed in Egypt before that time. General Pitt-Rivers' discovery, however, furnished a stratigraphic geological date for such flint implements in the Nile Valley, although at that time no one knew

¹ See his report in *Journal of the Anthropological Institute of Great Britain and Ireland*, XI (1882), 382-400.

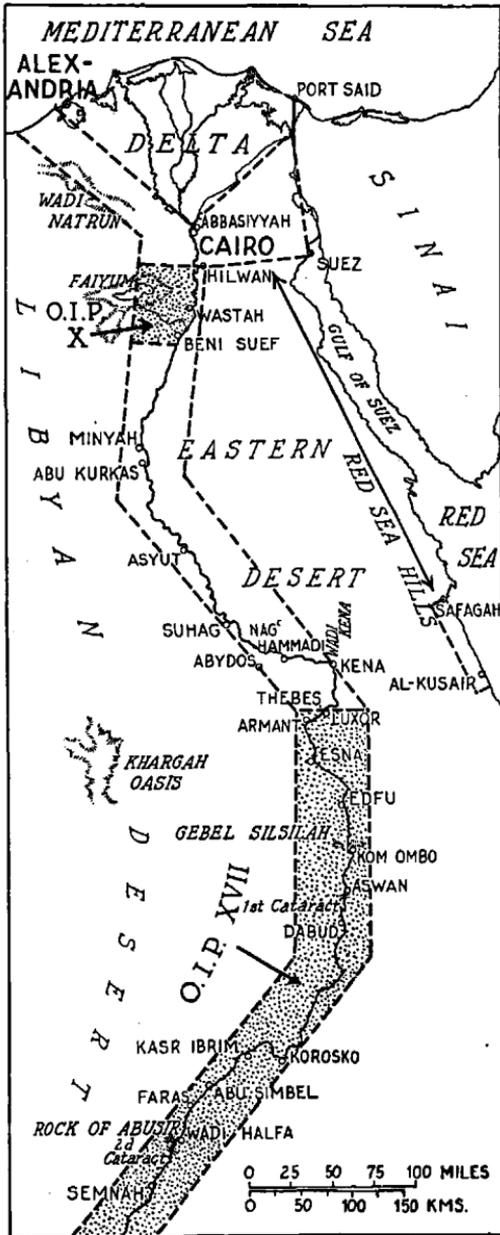


Fig. 51

very much about the date or stage of the gravel deposit itself. Since that time it has unhappily become a desert sport to gather flint implements of Paleolithic type from the surface of the desert on either side of the Nile. The natives have learned by experience that such specimens are eagerly bought by tourists, and vast quantities of surface evidence of this kind have thus been lost to science.



FIG. 52.—INSTITUTE AUTOMOBILES AT THE FIRST "CHICAGO HOUSE," OPPOSITE LUXOR, EGYPT

Fortunately such surface evidence is not of much scientific value. Almost every archeological museum throughout the world now contains Paleolithic artifacts gathered on the desert west of the Nile. Since these are not geologically dated, they do not tell us anything more than the general fact that in early Paleolithic times the Sahara was habitable.

FIG. 51.—SKETCH MAP OF EGYPT AND NUBIA

The areas so far investigated by the Prehistoric Survey Expedition are inclosed by broken lines; those described in publications already issued or in press are distinguished by stippling also.

The organization of the Prehistoric Survey Expedition has already been discussed (pp. 73 f.). The field director, Dr. Kenneth S. Sandford, has been carrying on a survey of the Nile Valley for the Oriental Institute since the winter of 1926/27. For four seasons he was assisted by Dr. W. J. Arkell, of the department of geology at



FIG. 53.—A "REPAIRED" ROAD NEAR TIMA, BETWEEN ASYUT AND SUHAG. HALT TO TIGHTEN NUTS AND BOLTS

Oxford. Since then he has been accompanied and assisted by his wife, who is a grandniece of the distinguished English geologist Prestwich and, following the family tradition, is herself a well trained geologist. At the end of six years Dr. Sandford had completed the survey along both banks of the Nile from the Second Cataract on the south for a thousand miles northward to the Mediterranean Sea (Fig. 51). Whenever necessary, the survey was extended into the desert, which by the use of automobiles (Figs. 52—

THE PREHISTORIC SURVEY

53) could sometimes be penetrated for distances which would have been quite unthinkable in the old days of the caravan. Thus in the latitude of Kena, where the Nile approaches most closely to the Red Sea, the survey was extended to its neighboring shores (Fig. 54), and new evidence of Paleolithic man in that region was found there by Dr. Sandford. It was not possible, however, during those years to extend the survey systematically and completely throughout the desert on both sides of the Nile for any great distance. An important, but very hazardous and difficult, supplementary survey of some thousands of square miles of the western desert, therefore, still awaited future effort.

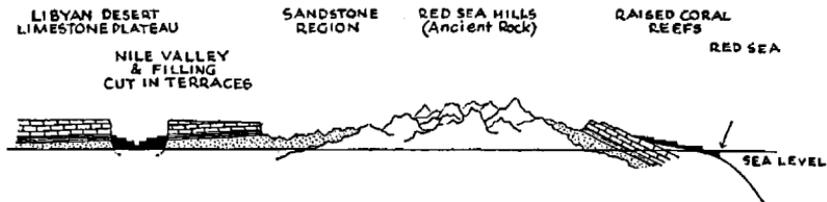


FIG. 54.—PURELY DIAGRAMMATIC GEOLOGICAL SECTION FROM THE NILE TO THE RED SEA AT ABOUT THE LATITUDE OF KENA

A beginning on this task was made in the autumn and early winter of 1932 by an expedition led by Major Bagnold, assisted by the Royal Geographical Society and the Oriental Institute. The expedition was made possible by a group of interested army officers, who contributed personally to its maintenance. The Oriental Institute was chiefly interested in the prospective prehistoric and archeological data, and this branch of the investigations was in the hands of Dr. Sandford and Mr. W. B. K. Shaw.

Equipped with four cars, the expedition was elaborately fitted out in accordance with the extended desert experience of several of the group. The expedition left Cairo late in September, 1932, proceeded southwestward by way of the Faiyum depression, and, driving through a rugged desert area, finally reached the Oasis of Khargah and passed thence in four days to Gebel Owenat, rediscovered by Hassanein Bey in 1923. This oasis is some 450 miles

west of Wadi Halfa and the Nile. A generous petrol dump had been established at Selimah Oasis between Owenat and the Nile. From the Selimah dump a large gasoline supply was brought far westward into the Sahara to Owenat itself. From this new base the expedition proceeded farther westward to Sarra. Though this point is within the boundary of the Anglo-Egyptian Sudan, the expedition to its surprise found Italian troops there. The latter received the expedition with the greatest hospitality, illustrating the fact that army officers of different countries get on with one another in the most friendly fashion if they are not interfered with by the diplomats.

The expedition then moved southwestward toward Tibesti, approaching the frontier of French Equatorial Africa, and returned thence via Tekro to Owenat. With a replenished stock of gasoline it again moved southward, directly through the territory of dangerous raiding tribes. In the latitude of Khartum, but some 600 or 700 miles west of the Nile, it passed out of the desert, where its members had experienced great heat, with a strictly limited water ration, into a region swarming with ostriches and difficult to penetrate because of scrubby undergrowth. After reaching el-Fasher, it proceeded directly northeastward to the gasoline dump at Selimah and reached the Nile again at Wadi Halfa.

With its return to Cairo the expedition had traveled some 4,500 to 5,000 miles, largely through unknown territory. Evidences of human habitation in regions now desert and absolutely uninhabitable were found by Sandford and Shaw in great quantities. They include many Paleolithic implements. Southwest of Khargah Oasis, 250 miles or more west of the Nile, they found old, now dry, lake beds along the shores of which man had lived apparently right down into the early predynastic age of Egypt—a fact of far-reaching importance. To sum up the results of this expedition, the Sahara Desert southwest of Egypt has for the first time been investigated archeologically and proves to have been widely inhabited in prehistoric times. The uninhabited areas, when carefully mapped and studied, will undoubtedly furnish instructive results.

On returning to the Nile at Wadi Halfa Dr. Sandford left the desert expedition party and rejoined his wife, who had been waiting

for him there. Accompanied by Mrs. Sandford he then examined the Nile from the cataract region above Dongola to a point upriver of Atbara. Our Prehistoric Survey, therefore, now possesses evidence of prehistoric occupation of the Nile Valley from south of Atbara to the sea, a distance of some 1,700 or 1,800 miles. The correlation of all this evidence of prehistoric man, from both the Nile Valley and the Sahara, will make it possible to reconstruct an entirely new picture of the human career in Northeast Africa. Materials collected both from the desert and from the cataract and southern regions, will form valuable series in the collections of the Oriental Institute.

The completed survey of the 1,000-mile stretch of the Nile Valley from the Second Cataract to the Mediterranean Sea, now supplemented by the new explorations just described, is an achievement as yet without parallel in such investigations, and its results are correspondingly new. Obviously this survey makes no claim to have exhausted the field. Such was not its plan or purpose. Dr. Sandford himself has well said: "The object of the survey has been to build a framework of knowledge, to which local information may be added by local investigators for many years to come."² Though such local observations will undoubtedly continue to supply further details, the facts established by the Prehistoric Survey have for the first time brought out and clearly established the main outlines of the picture.

The geological work done has shown that the Nile and its tributaries, as they eroded their valley floors during an age of plentiful rainfall, deposited a series of gravel benches one below another in a succession of terraces (Fig. 55). A long time after the process of depositing these terraces had begun, man appeared in the Nile Valley. From that point onward the terraces contain examples of his handiwork in the form of flint implements and weapons of types which, in the main, may be grouped in the various subdivisions of Paleolithic flint industries so long familiar to prehistoric archeologists in Europe. The decisive character of this evidence, it should be noted, is established by the fact that the Prehistoric Survey has

² "Recent Developments in the Study of Paleolithic Man in Egypt," *American Journal of Semitic Languages and Literatures*, XLVIII (1931/32), 170-83.

traced these terraces throughout the whole length of the Nile Valley from the sea to the Second Cataract and has found at intervals, as the expedition moved along the valley, Paleolithic implements *in situ* in the terrace gravels (Figs. 56-58). A genetically dated series of implements thus occurs, passing along the length of the valley. It is a remarkable fact that the terraces remain at constant heights above the present flood-plain levels throughout this great distance, pointing to a notable stability of the geological conditions involved.³

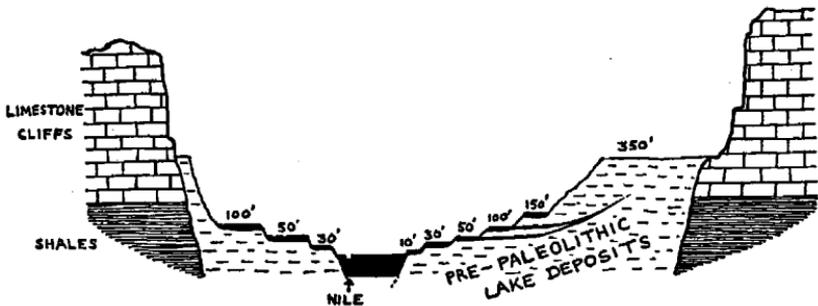


FIG. 55.—DIAGRAM TO ILLUSTRATE THE NILE TERRACES CUT BY THE RIVER IN THE PRE-PALEOLITHIC LAKE OR GULF DEPOSITS, AS FOUND IN THE REGION OF THEBES

The river has meandered to the left in 100-foot and modern alluvium times, for on that side the 150- and 10-foot terraces have been cut away. The right side, however, shows the full sequence of terraces, also the tributary wadies developed at the 100- and 50-foot-terrace periods.

Of fundamental importance for our study of earliest man's presence in the Nile Valley is Sandford's discovery that in Late Paleolithic times the river was laying down plentiful deposits of silt, which have accumulated at the Second Cataract to a height of 100 feet above the modern alluvium. The level of these silt accumulations gradually falls toward the north. It is less than 20 feet above the flood plain at Luxor, and disappears beneath the modern alluvium at Nag^c Hammadi in middle Upper Egypt. It will in the future be very important for prehistoric archeologists to determine wheth-

³ Cf. *ibid.*, p. 180.

er the human artifacts which they may find are lying in the ancient silt or in the relatively modern alluvium.

It is of vital importance for our understanding of man's early career in Northeast Africa to know when the overwhelming catastrophe of desiccation overtook him. To penetrate the desolate



FIG. 56.—THE 10-FOOT TERRACE IN THE VALLEY OF THE QUEENS' TOMBS AT THEBES

A Mousterian implement imbedded in the gravel is being pointed out by its discoverer.

wastes of the Sahara at the present is a difficult and dangerous undertaking. From time immemorial ill equipped caravans have perished there, and it is only by the most careful preparation that modern man is able to traverse the waterless desolation of North Africa. Of course the introduction of the modern automobile has greatly enlarged the field of possible travel. In practically every region where exploration has yet penetrated, the stone implements of prehistoric man are found lying on the surface of the Sahara. It is obvious that the prehistoric hunters who used these tools could

never have reached these regions in their present waterless condition; nor would there have been any reason for an attempt to do so, because a country so totally without vegetation could not maintain any animal life that would tempt the hunters. It is perfectly clear,



FIG. 57.—A CLOSER VIEW OF THE MOUSTERIAN IMPLEMENT THE POSITION OF WHICH WAS INDICATED IN FIGURE 56

It still lies undisturbed just to the left of, and almost touching, the modern Egyptian coin.



FIG. 58.—THE SAME MOUSTERIAN IMPLEMENT, A FLAKE STRUCK FROM A CORE, AFTER ITS REMOVAL FROM THE GRAVEL OF THE 10-FOOT TERRACE IN WHICH IT WAS FOUND IMBEDDED (CF. FIGS. 56 AND 57)

therefore, that there was a time when what is now the desert plateau of the Sahara was a green and well watered upland where game was plentiful. The problem of determining the date when desiccation set in is of the greatest importance both for natural science and for the history of man.

While carrying on a detailed investigation of the Nile terraces in the vicinity of the Faiyum, a remarkable depression in the western desert plateau, Sandford and Arkell succeeded in tracing one

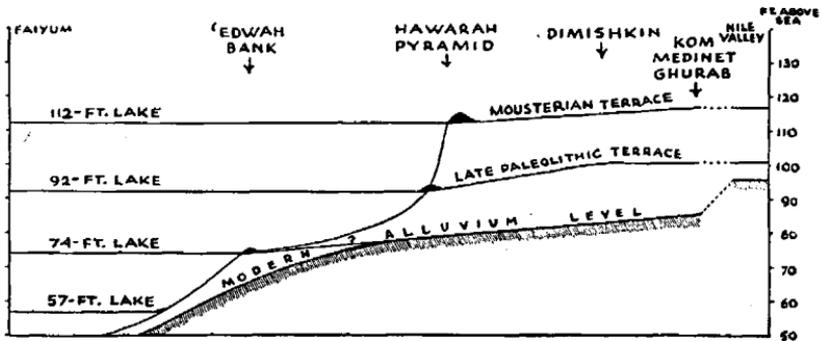


FIG. 59.—CORRELATION OF FAIYUM LAKE BEACHES CONTAINING MIDDLE AND LATE PALEOLITHIC ARTIFACTS WITH NILE TERRACES CONTAINING ARTIFACTS OF THE SAME AGE

of these terraces out of the Nile gorge and through the mouth of the Faiyum into the Faiyum itself (Fig. 59). They discovered that in Middle Paleolithic times a lake (Fig. 60) had filled the Faiyum depression to a point 112 feet above present sea-level. This and later levels of the shrinking lake were evidenced by successive beaches (Figs. 61–62), which were dated in terms of man's career from the Middle Paleolithic down into the Neolithic period by the artifacts imbedded in them (Fig. 63). The old Pluvial Age of plentiful rainfall was thus connected with the later desiccation of North Africa. The advance of the desiccation was measured by the ever lower beaches of the Faiyum lake as by the sinking sands of an hourglass. That catastrophe, of fundamental importance to the history of

ancient man in Africa, clearly took place well within the period of human prehistory on the Nile.



FIG. 60.—THE SHORE OF THE GREAT MIDDLE PALEOLITHIC LAKE OF THE FAIYUM

The cultivated fields at the extreme right now cover what was the ancient lake bottom. Members of the Survey are seen leveling the marginal gravels deposited by the lake. In prehistoric times, when the surrounding plateau (now desert) enjoyed plentiful rains and was covered with verdure, Mousterian man lived and hunted or fished along the margin of the now vanished lake 112 feet above present sea-level. Mixed with the shingle of this ancient beach the Survey found stone implements left behind at the camp grounds of these prehistoric men.

The correlation of this tremendous transformation with the human career in the Nile Valley, and in the wide plains and plateau of Egypt and the Sudan is now becoming possible. At that time Europe was probably no longer connected with North Africa by two land



FIG. 61.—ANCIENT BEACHES, PART OF A SERIES OF TEN FOUND TOGETHER IN THE SOUTHEASTERN FAIYUM

In these views we look first toward the cliffs, which consist of fossiliferous Pliocene strata, then out over the prehistoric lake bed, on which the Expedition's automobile stands.

bridges—one at Gibraltar and the other across Sicily—but migration seems to have been feasible; the prehistoric archeologists of Europe have observed noticeable evidences of North African influence in Upper Paleolithic times in Europe. As we look toward the Nile Valley the historian at once recalls that the earliest historical evidences, both written and archeological, indicate persistent intrusion of human migration from the west into the Nile Delta, and sometimes even into its gorge along routes farther southward. Sandford has himself referred to the fact that those historical migrations Nileward from the west are probably not the earliest

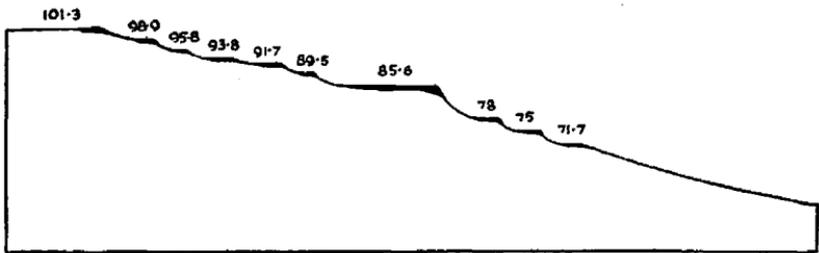


FIG. 62.—DIAGRAM OF THE SAME TEN BEACHES, SHOWING FALLING LEVEL OF THE PREHISTORIC LAKE IN THE FAIYUM DEPRESSION (CF. FIG. 61)

Heights are in feet above sea-level, and vertical scale is twice the horizontal

examples of such human movement. The gradual desiccation of the Sahara plateau must have driven into the Nile Valley both the game and the hunter who pursued it, and the old problem of the domestication of animals and the origin of agriculture must be investigated in the light of this shift from the increasingly waterless desert to the well watered floor of the Nile gorge.

The oldest evidences of the presence of man in the Nile Valley found by the Prehistoric Survey go back to a very remote date. Over a distance of 60 or 70 miles along the west side of the valley from a point south of the Faiyum to the pyramids of Gizah Sandford and Arkell discovered extensive remains of an ancient Nile bed well to the west of the present course of the river. These remains consist of gravel deposits, in places some 60 feet deep, the geological date of which is stated to be early Pleistocene. Imbedded in gravels of

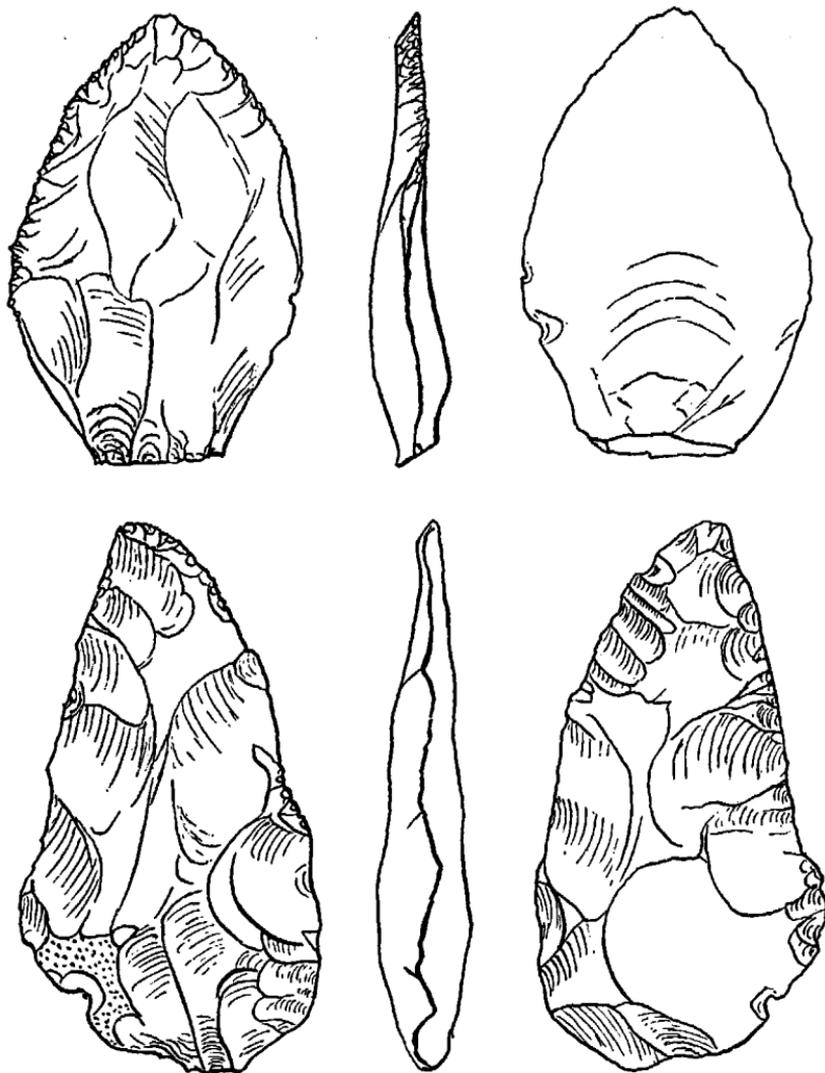


FIG. 63.—MIDDLE PALEOLITHIC (MOUSTERIAN) FLINT IMPLEMENTS DUG OUT OF THE 112-FOOT BEACH OF THE PREHISTORIC FAIYUM LAKE. SCALE, 4:5

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this remote date—remote at least from the human point of view—Sandford and Arkell found human artifacts made without doubt by the earliest men yet known in the ancient Near East, the earliest inhabitants of the Nile Valley thus far discernible.

The Prehistoric Survey has published one preliminary report⁴ and a brief article telling of the silts and the course of the field work.⁵ A full and detailed account of its work on the Nile-Faiyum divide, mentioned on page 139, has also appeared as the first volume of the definitive publication.⁶ Five more such volumes on the Nile Valley are planned, one of which is now in press, while another is almost ready for the press. These two volumes cover the territory from the Second Cataract, above Wadi Halfa, to Hilwan, just south of Cairo.

The basic value of research like this does not need any further demonstration. It is the hope of the Oriental Institute that our Prehistoric Survey may soon be extended from Northeast Africa to the valleys of the Tigris and the Euphrates, where such researches are still as entirely unknown as they were in the Nile Valley when the Oriental Institute organized this work.

⁴ K. S. Sandford and W. J. Arkell, *First Report of the Prehistoric Survey Expedition* ("Oriental Institute Communications," No. 3 [Chicago, 1928]).

⁵ K. S. Sandford, *op. cit.*, pp. 170-83.

⁶ K. S. Sandford and W. J. Arkell, *Paleolithic Man and the Nile-Faiyum Divide* ("Oriental Institute Publications," Vol. X [Chicago, 1929]).

CHAPTER VI

THE SAKKARAH (MEMPHIS) EXPEDITION

The Prehistoric Survey has revealed the earliest men in the Nile Valley in a state of Paleolithic savagery, has carried them through the desiccation of North Africa which began in Middle Paleolithic times, and has followed them from the Paleolithic hunting stage into the early Neolithic period, the dawn of an age of settled life based on domestic animals and agriculture. The evidence disclosing the introduction of these two fundamental transformations of human life is for the most part buried deep under the black alluvium that forms the present floor of the Nile Valley. The culmination of the great transformation resulting from the possession of animal husbandry and agriculture is very fully revealed in massive masonry tombs of the Egyptian Old Kingdom, the Pyramid Age (about 3000-2500 B.C.).

The tombs of this age contain the earliest graphic or pictorial representations in human history of a highly developed social, governmental, and industrial life. They disclose an extraordinarily rich and varied cross-section of human society. Here are the earliest known revelations of the life of the family as a fully developed institution. In the relief scenes on the walls we see the whole process of agriculture, from plowing and sowing to harvesting and threshing; many aspects of animal husbandry (cf. Fig. 4); and a highly diversified range of crafts and industries, from pottery-making, metal-working, weaving, and leather-work to cabinetmaking and shipbuilding. These and many other human activities are vividly depicted on the walls, so that we have not only a picturesque and beautiful panorama of human life but a sufficiently detailed and specific representation of it all to form a basis for the study of the first highly developed human system of which a graphic record still survives.

The place of these developments in human history is of unique

importance in our knowledge of man, for the last of the Old Kingdom tombs in the cemetery of Memphis mark the close of the first thousand years of unbroken social, national, and governmental development anywhere discernible by us in ancient sources. In addition, this great body of painted wall sculptures forms a unique treasury of art and therefore a fundamentally important chapter in the history of art. There has been a regrettable lack of adequate publication of these sculptures, which fill the tomb chapels of the Old Kingdom cemeteries stretching some 60 or 65 miles from Gizah on the north to the mouth of the Faiyum on the south. The most extensive ancient cemetery in the world is doubtless the necropolis of the great city of Memphis. This necropolis, now bearing the name of the neighboring modern village of Sakkarah, stretches far across the desert plateau, looking down upon the wide-spreading palm groves which flourish where once the streets and houses of Memphis covered the plain. Little was known of this cemetery until the great Prussian expedition of Lepsius disclosed something of its vast treasury of ancient records. A decade later the excavations of Mariette began to reveal the splendor and beauty of the extraordinary art which still survived in its tomb chapels.

Considerations of space forbid any attempt to recount the epigraphic work done by our predecessors in this Memphite necropolis. Their efforts have been confined almost exclusively to line drawings or to black-and-white photographs. We shall see (chap. ix) that even photographs are an incomplete record and an insufficient basis for publication. The exquisite low relief modeling of these Old Kingdom sculptures is completely lost in the conventional line drawings. And neither process—photography or line drawing—reproduces the colors.

It is obvious that an effort should be made to record these wall scenes in photographs retouched and emphasized by a skilled artist in the presence of the originals, so as to bring out clearly their plastic character, and, wherever the preserved colors require it, in paintings based on such photographs and registering accurately all of the surviving color traces. Such methods are of course costly in execution in both time and money; and a publication adequately reproducing such copies, especially with color plates, is likewise

THE SAKKARAH (MEMPHIS) EXPEDITION 147

very costly in production. A program of salvaging and publishing ancient Egyptian painting, however, cannot omit the painted sculptures of the Old Kingdom in the Sakkarah cemetery. Mr. John D. Rockefeller, Jr., after visiting Sakkarah, made it possible for the Oriental Institute to organize an expedition which should be able to carry on for some years the task of recording and publishing, in accordance with the standards above described, these so-called "mastaba" reliefs of the Memphite necropolis. This indispensable body of painted reliefs of the Old Kingdom will thus be added to the treasury of ancient Egyptian art.

The task was intrusted by the Institute to Professor Prentice Duell, of the art department of Bryn Mawr College, whose well known work in salvaging wall paintings in the Etruscan tombs of Italy had given him the requisite experience for undertaking the long and difficult project among the Sakkarah tombs. In the winter of 1930/31 the construction of an expedition field house (see Fig. 36) with studios and workrooms was begun among the ruins of Memphis. Here an expedition headed by Professor Duell is now at work on the great task.¹

The tombs to be included are the famous mastabas of Tî, Ptahhotep, Mereruka (Meri), and Kegemni, the newly discovered tomb of Idiut, and one or two smaller mastabas. Presumably the relief scenes in these tombs will fill at least five folios. Since the wall scenes in such mastaba tombs are very much smaller than those in the temples or even in the tomb chapels of the Theban cemetery, a somewhat smaller format has been adopted for the Sakkarah folios than for the Theban ones. It is not expected that these Sakkarah volumes will be completed before 1938 or 1939.

These volumes, together with those of the Davies-Gardiner paintings (chap. x) and the publications of the Medinet Habu (chap. ix) and Abydos (chap. x) expeditions, will form a very comprehensive and representative body of written records and works of art, revealing ancient Egyptian civilization during the Old Kingdom (about 3000-2500 B.C.) and the Empire (16th-12th centuries

¹ The staff includes Stanley R. Shepherd and Vcevolod Strelakovsky, artists; Clyde R. Shuford, architect; and Leslie F. Thompson, photographer.

B.C.). For the period of the Middle Kingdom, the Feudal Age which culminated in the two centuries following 2000 B.C., the Institute has as yet no researches in operation, though the work of this period too is as yet inadequately salvaged and published. It is preserved especially among the tombs of Beni Hasan, where much copying in color still remains to be done.

CHAPTER VII

THE COFFIN TEXTS

A thousand years of social experience, the latter half of which is represented and reflected to us in the Old Kingdom tombs of Egypt, especially those in the cemetery of Memphis, brought into the life of the Egyptians the earliest ideals of worthy conduct that have survived to us. These moral ideas, the earliest indications of a realization of social responsibility and the emergence of conscience, began to find expression in written form as early as the middle of the fourth millennium B.C.¹ After the fall of the Old Kingdom this ethical evolution moved rapidly, and by 2000 B.C., during the Middle Kingdom, its effect is discernible in the development of ideas of moral responsibility beyond the grave.

While tracing this development in preparing a course of the Morse Lectures for Union Theological Seminary,² I was much hampered because of the inaccessibility of a very important body of Egyptian religious sources of the Middle Kingdom known as the Coffin Texts (Figs. 64-65), only a small fraction of which had been published. I therefore determined to undertake the formidable task of copying and publishing these texts. On learning of this plan my friend and colleague, Dr. Alan H. Gardiner of London, wrote expressing great interest and indicating that he too had been considering the same project. Thereupon I invited him to join me and to make the publication of the Coffin Texts a joint project. It was well that I did so, for I had greatly underestimated both the extent and the difficulty of the task, and it is more than probable that the growing responsibilities for the administration of the Institute would never have left me the time to finish the project alone. It

¹ See the author's forthcoming volume, *The Dawn of Conscience and the Age of Character*, mentioned on p. 412.

² Published under the title *Development of Religion and Thought in Ancient Egypt* (New York: Charles Scribner's Sons, 1912).

was to Dr. Gardiner's invaluable co-operation, therefore, that the continuance of the project in its earlier years was due.

The religious documents of Egypt are of commanding importance, disclosing to us as they do man's earliest surviving ethical ideals. The Egyptian Book of the Dead has become, in title at least, a household word in the Western world. The Book of the



By the kindness of the Metropolitan Museum of Art and Mr. A. M. Lythgoe

FIG. 64.—WOODEN COFFIN OF THE ROYAL LADY AASHAÏT, DISCOVERED IN THE ELEVENTH DYNASTY TEMPLE AT DEIR EL-BAHRI AND NOW IN THE CAIRO MUSEUM

The tomb of this royal lady was discovered during the Metropolitan Museum excavations of 1920/21 in a row of tombs of the queens of Mentuhotep II of the Eleventh Dynasty (2160-2000 B.C.). It is the first royal coffin of the Middle Kingdom yet found containing Coffin Texts. The body lay with the face immediately behind the eyes painted on the outside at the right end. On the inside, behind these eyes, is another pair.

Dead, however, is but a *late* group of religious documents, compiled out of similar but far older materials. Because of the excessively corrupt state of the manuscripts, existent translations of the Book of the Dead are of little or no value. In order to build up a sound original text, its older constituent elements must be completely collected and carefully studied and compared.

The oldest body of literature yet known in any language is a large group of religious texts employed for the benefit of the later pharaohs of the Pyramid Age or Old Kingdom (about 3000-2500



FIG. 65.—COFFIN TEXTS AND PAINTINGS ON CEDAR PLANKS FORMING ONE SIDE OF AN ANCIENT EGYPTIAN COFFIN OF ABOUT 2000 B.C.

It is such texts as the above (at lower right), revealing the dawn of conscience, which the Institute's Coffin Texts project has copied from scores of similar coffins scattered throughout the museums of Egypt and the Western world. Their publication will for the first time make available to scholars all the known surviving sources of the Book of the Dead.

b.c.) and for their exclusive use engraved in their pyramids in the cemetery of Memphis. They are therefore termed the Pyramid Texts (Fig. 66). These include literature which had descended from an older period at least as far back as the thirty-fifth century B.C., while the latest of the Pyramid Texts are a thousand years later than that date.

With the extension of a blessed destiny in the hereafter to include less exalted folk than the pharaohs, the nobles began to record excerpts from the Pyramid Texts in their tombs and upon their coffins. After the twenty-second century B.C. the barons of the Feudal Age (the Middle Kingdom) were more and more interested in having such literature available after death. The popularization of a blessed hereafter not confined to the pharaohs produced many pictures of happiness for humbler folk in the next world. Much of the resulting body of religious literature concerning the life beyond the grave probably owed its origin to the Feudal Age, though some of it was older. Such texts, then, form a mortuary literature suited to the *people* of the Feudal Age, whereas the Pyramid Texts had been intended for the Pharaoh only. Much of this later body of mortuary texts passed over into the Book of the Dead, which therefore consists of selections from a humbler and more popular mortuary literature.

These three different groups of religious texts may be correlated as follows:

Form and Date	Social Class	Contents
I. THE PYRAMID TEXTS		
Engraved in five pyramids, about 2625-2475 B.C.	Exclusively for the pharaohs; sharply distinguished from II and III	Older materials, from about the 35th to the 25th century B.C.
II. THE COFFIN TEXTS		
Written with ink on the insides of wooden coffins (very rarely on papyrus), 23d to 18th century B.C.	For the nobles and the well-to-do; not sharply distinguished from III	A large proportion of Pyramid Texts, with much additional material that later passed into the Book of the Dead



FIG. 66.—PYRAMID TEXTS ENGRAVED IN THE TOMB CHAMBER OF KING UNIS AT SAKKARAH, EGYPT

Taken altogether, more than 4,000 lines of such texts occur in the pyramid tombs of five Old Kingdom pharaohs.

Form and Date

Social Class

Contents

III. THE BOOK OF THE DEAD

Written on a papyrus roll and placed in the tomb, 16th century B.C. until the Christian era	For all classes of society; not sharply distinguished from II	A large body of Coffin Texts, also other, probably older, material
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The position of the Coffin Texts both chronologically and socially is between the Pyramid Texts and the Book of the Dead, though they are quite like the latter in character. Hence they contribute essentially to the understanding of both the other groups.

These forerunners of the Book of the Dead, including copious extracts from the preceding Pyramid Texts, were written on the inner surfaces of the heavy wooden³ coffins of the Feudal Age (Fig. 67). Every coffin-maker in the towns up and down the Nile Valley was furnished by the priests of his town with a local version of these utterances. Before the coffins were put together the scribes in the maker's employ filled the inside surfaces of the cedar planks with pen-and-ink copies of such texts as he had available (see Figs. 65 and 67). The work was commonly done with great carelessness and inaccuracy, the effort being to fill up the planks as fast as possible. In the same coffin the scribes might write the same chapter two or three times; in one instance a spell is found no less than five times in the same coffin.

Under such circumstances it is quite impossible to make these documents available as scientific materials without the most careful copying and comparison of all the available duplicate texts. A valuable group selected from coffins in the Cairo Museum was copied, assembled, and published some years ago by M. Pierre Lacau⁴ with his usual care and accuracy. But such documents can

³ The wood is commonly, though perhaps incorrectly, called cedar.

⁴ Lacau, "Textes religieux," *Recueil de travaux*, Vols. XXVI-XXXVII (1904-15). Lacau's collection included 87 so-called "chapters" or spells. The character of the Coffin Texts as containing the earliest surviving fragments of the Book of the Dead was first recognized by Lepsius, who published the material in the Berlin collection (*Älteste Texte des Totenbuchs* [Berlin, 1867]). Other texts were later published by Birch (*Egyptian Texts . . . from the Coffin of Amamu* [London, 1886]). Wilkinson's

never be fully understood in themselves, nor can the Book of the Dead, so largely built up out of them, ever be translated with any approximation to accuracy, until *all* these Coffin Texts have been collected and published as a whole.



FIG. 67.—COFFIN TEXTS INSCRIBED ON A MIDDLE KINGDOM COFFIN IN THE ORIENTAL INSTITUTE MUSEUM

The texts here illustrated were derived from the Pyramid Texts

tracing of an Eleventh Dynasty text from a coffin now lost was published by Budge, *Facsimiles of Egyptian Hieratic Papyri in the British Museum* (London, 1910), Pls. XXXIX-XLVIII, pp. xxi-xxii. A similar body of texts from the burial chamber of the Middle Kingdom tomb of Harhotep was published by Maspero in "Mémoires de la Mission archéologique au Caire," I, 136-84. A useful statement of the then available materials will be found in Lacau, *Sarcophages antérieurs au nouvel empire*, I ("Catalogue général . . . du Musée du Caire," XI [Le Caire, 1903]), vi f.

The importance of these texts in the history of early religion is obvious—not least because it is now quite evident that the moral sensitiveness of the early Egyptian has made his religious documents the earliest literary expression of man's ethical consciousness. In the Coffin Texts we find the first clearly outspoken conviction of moral responsibility in the life hereafter. In the evolution of civilization they therefore mark one of the most important stages. While this is neither the place nor the stage of our investigations which would permit anything more than a casual mention of other reasons for the study and publication of these texts, it may be further mentioned that there is also found in them a body of astronomical tables, the earliest such materials available in old Egyptian documents.

The Oriental Institute therefore committed itself to a complete collection and publication of the Coffin Texts, based, as the word "complete" necessarily indicates, upon a study of all the existent materials scattered through the museums of Europe and America and especially upon the great nucleus of nearly one hundred available coffins in the Egyptian national museum at Cairo. Dr. Gardiner and the writer met in London in the summer of 1922 to arrange final details for a concerted attack upon the great collection in the Cairo Museum. It is a pleasure to record here that every great museum of the world, without hesitation, placed its entire body of such materials at the disposal of the editors of the new project. Some of the more important collections were soon made accessible to the writer in the form of photographs, on the basis of which it was possible to make preliminary manuscript copies which were later collated with the originals in the various museums.

The plan of operations by which such a complicated body of original documents shall be copied and organized must be carefully defined in the beginning. While it is not necessary to recount here all the details of our plan, it may be of interest and perhaps of assistance to other scholars to recite some of its provisions.

Each editor or copyist prepares all his copies on sheets of a printed page form, punched for loose-leaf filing, furnished by the Oriental Institute (Fig. 68). This page form, in general, furnishes space for four columns of hand-copied text (*a*, *c*, *e*, and *g*). These

Designation		Outside	Head	Back	Top	Chap.	Sheet No.	
		Inside	Foot	Front	Bottom	Lines	to	Total No. of Sheets
Owner:		Provenience:			Date:	Museum:		Mus. No.
Text	Textual Notes	Text	Textual Notes	Text	Textual Notes	Text	Textual Notes	
a	b	c	d	e	f	g	h	

Height of lines:	cm.	Height of β:	cm.	Photo No.	Copied by	from original	from photo
Published by	in	Parallels: Pvr.	; CT	Copied by	with original	with photo	; BD

FIG. 68.—A BLANK PAGE FORM FOR MANUSCRIPT COPIES OF THE COFFIN TEXTS
 The actual sheets are 8½×11 inches

columns are vertical to correspond with the arrangement of the original texts, which, as shown in Figures 65 and 67, are written in vertical columns. Alongside each text column the page form provides a blank space (*b*, *d*, *f*, and *h*) for notes. These notes are especially necessary owing to the fact that the originals are in a linear cursive form of hieroglyphic which not infrequently approaches hieratic. The hand-copying on the manuscript page form then becomes a transliteration into hieroglyphic, and many textual notes of the copyist are concerned with details of transliteration. The coffins are more frequently than otherwise in damaged condition, with even the signs in the ancient unfadable carbon ink illegible in many places. There are therefore numerous uncertain readings and gaps in the text. In order to determine the relative length of these gaps it is necessary to insert the height of the columns of the original (see bottom of page form, Fig. 68) and the usual height of some common sign, such as \downarrow , as well as the height of the gap or lacuna itself. As these measurements vary from coffin to coffin, they must be carefully taken from the coffins themselves and entered not only for each coffin but for each side of the coffin interior.

It will be seen that the top of the page form provides space for a designation of each coffin, the name of the deceased owner who occupied it, the provenience of the coffin itself, its date, the name of the museum where it is now installed, its museum number, and indication of the exact situations of the different portions of the texts, which occur especially on the inside of the coffin (head, foot, back, front, top, bottom). The page forms when filled must be numbered consecutively from the beginning, so that no two sheets bear the same number. If it happens that the text on a given sheet has already been published anywhere, this fact too is entered, together with references to parallel texts in the Pyramids, the Book of the Dead, or other Coffin Texts. Spaces for these references and also for the signed initials of the copyist are provided at the bottom of the page form. Below the copyist's initials are signed those of the collator; for every bit of text has been checked after the copying.

All finished sheets are eventually sent to the Chicago headquarters of the Institute, where they are manifolded by the photostat so that each editor or collaborator may receive a facsimile of

every sheet prepared in the course of the Coffin Texts enterprise. Such a completed and manifolded sheet is reproduced in Figure 69. These manuscript sheets themselves are then filed in suitable loose-leaf binders, the set for each coffin being preceded by a heavy yellow sheet with index tab bearing the coffin designation.

Besides being copied by hand, every text is also photographed. The photographs are numbered consecutively and as systematically filed as the hand copies. The photographs furnish a facsimile copy of the great bulk of the text; and, as far as practicable, a complete series for each coffin has been in the hands of the copyist before he approached the original. Except in the case of a very illegible coffin, the copyist has been able to work at his desk, making his copy of the great bulk of the text from the photographs. He could then collate his copy with the original, giving chief attention, of course, to the broken or illegible passages. Full notes regarding the available photographs are entered on the page form.

The distribution of the materials which it was necessary to copy and edit made a long sojourn in Egypt necessary. The great nucleus of such religious texts was to be found in the Egyptian national museum (see p. 156). But little more than the winter and spring seasons there could be utilized for copying, since the summer heat of Cairo would have a very unfavorable effect on the accuracy of scientific work. The winter work in Cairo could, however, be supplemented by summer copying in European museums, especially the British Museum, the Louvre, and the Berlin Museum. Finally, there were some coffins in America in the Boston Museum of Fine Arts, the Metropolitan Museum of New York, the Yale collections at New Haven, and the Oriental Institute at Chicago.

Obviously it was necessary to attack the huge Cairo group of materials first. In the winter of 1922/23, therefore, Dr. Alan H. Gardiner and the writer began work together on the Cairo coffins. We had with us also an associate, Dr. Ludlow S. Bull, who did much useful work in collecting the scattered material in the Cairo Museum and in classifying M. Lacau's manuscripts (see below). Dr. Bull, one of our own doctors, was under appointment in the Egyptian department of the Metropolitan Museum of Art, and therefore spent only one winter with us. The work of this first winter really

Designation <i>B1R 2</i>		Outside	Head <input checked="" type="checkbox"/>	Back	Top	Chap.	Sheet No. <i>2</i>
		Inside <input checked="" type="checkbox"/>	Foot	Front	Bottom	Lines <i>7 to 3</i>	Total No. of Sheets <i>166</i>
Owner: <i>Z. S. P.</i>		Provenience: <i>Bersabek</i>		Date:		Museum: <i>Brit. Mus.</i>	Mus. No. <i>30040</i>
Text	Textual Notes	Text	Textual Notes	Text	Textual Notes	Text	Textual Notes
	<i>b</i>		<i>d</i>		<i>f</i>		<i>h</i>
	<p><i>1</i> <i>beg. of head</i> <i>ll (hgn lost)</i> <i>run ←</i></p> <p><i>rad</i> <i>h. of top</i></p> <p><i>no text</i></p>		<p><i>2</i> <i>contains</i> <i>↑ from above l.g.</i></p> <p><i>no sign, raised much</i></p>		<p><i>restored</i></p> <p><i>black</i></p> <p><i>see bottom of p.</i></p>		<p><i>3</i> <i>head off (no all signs raised)</i></p> <p><i>xxx</i></p>
Height of lines: $\pm 3\frac{1}{2}$ cm.		Height of <i>ll</i> $\pm 1\frac{1}{2}$ cm.		Photo No.		Copied by <i>A. G. S.</i> from original <input checked="" type="checkbox"/> <input type="checkbox"/> <i>from photo</i> Collected by <i>G. R. G.</i> with original <input checked="" type="checkbox"/> <input type="checkbox"/> <i>with photo</i>	
Published by _____ in _____		Parallels: Pyr. _____ ; CT _____				; BD //5	

FIG. 69.—A PAGE FORM OR SHEET CONTAINING MANUSCRIPT COPY OF PART OF A COFFIN TEXT

disclosed to us for the first time the formidable difficulty and unforeseen extent of our task.

M. Pierre Lacau, director-general of antiquities in the Egyptian government, was at first associated with us as a joint editor. He had formerly copied some sections of the Coffin Texts and had published a group of them.⁵ We held several joint meetings of the three editors—that is, Gardiner, Lacau, and the writer. But Lacau's administrative burden early made it impossible for him to continue in active association as editor, and he finally withdrew. He very generously placed at our disposition all his manuscript copies of the Cairo Coffin Texts, some of them still unpublished; and during the early stages of the work these copies proved very useful. Although unable to undertake further copies himself, M. Lacau cordially co-operated with us from the beginning, especially in placing at our disposition all needed museum facilities. He gave us an entire gallery, where the heavy coffins could be "knocked down," for it was necessary to take to pieces the sometimes very large and excessively heavy rectangular coffins and set up the individual planks on tables where they would be usable for both photographing and copying (Fig. 70).

At this juncture the project was fortunate in securing the services of John Hartman, an Austrian photographer residing in Cairo. With his assistance it proved possible to photograph nearly all of the Cairo Coffin Texts during the first winter. After photographing the Coffin Texts he was retained as the first field photographer of the Oriental Institute and attached to the Luxor Epigraphic Expedition (see chap. ix).

This first winter's work on the Coffin Texts was interrupted by the discovery of the extraordinary tomb of Tutankhamon (cf. p. 69). The progress of the work during the following winter (1923/24) was even more seriously interrupted by the Tutankhamon discovery (cf. p. 70).

It had by this time become evident that the writer's administrative responsibilities would not permit him to continue actively sharing in the work of copying the Coffin Texts at Cairo. Furthermore, the task was much too large for one man to undertake single-

⁵ See p. 154, n. 4.

handed. It was obvious, therefore, that someone must be found to succeed Dr. Bull as assistant to Dr. Gardiner. On recommendation of my old friend, Kurt Sethe, I looked up a former pupil of his, Dr. Adriaan de Buck. Unfortunately the Institute had no funds out of which to pay him a salary. Eventually Mr. John Nicholas



FIG. 70.—COPYING COFFIN TEXTS IN THE CAIRO MUSEUM

The painted planks of the ancient coffins, sometimes over 4,000 years old, are dismantled and set up for the work of making hand copies of the Coffin Texts.

Brown, of Providence, Rhode Island, generously agreed to contribute Dr. de Buck's salary for five years. He accepted an appointment on the Coffin Texts project and in February, 1925, arrived in Cairo, where he continued copying Coffin Texts into June of that year.

In the same month Gardiner, De Buck, and the writer met for an editorial conference in London. As a result we concluded that a single copy of the Coffin Texts would not be sufficient for proper

editorial development. It was at this point, therefore, that it was decided to reproduce photostatically the hand copies made by De Buck and to have the photostats properly bound for permanent use in the editorial work. In this way we were able to furnish Gardiner in London and De Buck in Leyden each with his own copy, besides having the hand copy of the original on file in Chicago. We also developed for De Buck a summer program of work in Paris, Berlin, and other European collections.

It was at this juncture that the writer was obliged formally to withdraw as one of the active editors of the project, merely retaining his general oversight of the task as editor of Oriental Institute publications. As Lacau had long since withdrawn, this left Gardiner as sole editor. It may be said here in anticipation that Dr. Gardiner with his usual fairness soon realized that the editorial responsibility was already largely in the hands of De Buck and that the latter's name too should therefore appear on the title page of the prospective publication.

During the winter of 1929/30, after working on the project for five years, Dr. de Buck completed the copying of all the Cairo coffins, a very formidable task. As above noted, he had already accomplished a good deal of work in the European museums during the summers. In this connection Dr. Allen and Dr. Rudolf Anthes had previously aided in the task by copying several coffins from photographs. Dr. de Buck afterward collated these copies with the originals. When the European coffins had thus been finished, he was able to turn his attention to America, where he promptly completed the entire list during the winter of 1930/31.

Though now scattered among the museums of Egypt, Europe, and America, the coffins involved in the Coffin Texts project came originally from relatively few sites in Egypt: Aswan (only one), el-Barsha (the largest quantity of both coffins and texts), Beni Hasan, Thebes, Gebelein, Meir, Asyut (important coffins, but not as many as from el-Barsha), and Sakkarah (rather corrupt texts). There were one hundred and thirty-eight coffins in all, differing immensely in size and importance. In our copies some of them required only a few record sheets (cf. Fig. 69), others as many as three hundred or more. Papyri with the same kind of texts and

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of the same period are rare. Through the kindness of Dr. Gardiner, however, the project has the use of four very valuable papyri, two of them long ones. The mere bulk of the materials is impressive. The hand copies reproduce more than 29,400 lines of original texts, filling nearly 7,000 sheets like Figure 69, which are now filed in thirty-seven volumes (Fig. 71). The photostatic copies occupy forty-one volumes. A summary of the work done is appended.

TEXTS ON COFFINS

Museum	Number of Coffins	Number of Pages	Number of Lines
Cairo	95	3,983	15,845
London	10	929	3,731
Boston	7	729	2,844
Paris	8	333	1,649
Berlin	8	219	1,361
Turin	2	148	697
New York	3	71	626
New Haven: Yale	1	59	308
Oxford	3	25	193
Chicago: Oriental Institute . .	1	20	57
Total	138	6,516	27,311

Copyist	Number of Pages	Number of Lines
De Buck	5,480	22,671
Gardiner	630	2,842
Anthes	178	924
Breasted	104	345
Allen	66	258
Bull	58	271
Total	6,516	27,311

SIMILAR MATERIAL IN PAPYRI,
ON TOMB WALLS, ETC.

Copyist	Number of Pages	Number of Lines
De Buck	257	1,786
Gardiner	52	335
Total	309	2,121

THE COFFIN TEXTS

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Ten years after it had been begun, therefore, this first comprehensive scientific project of the Oriental Institute had passed the stage of collection and copying and was ready for beginning the even more difficult task of editing and publication. It is at this stage that the present report is being written. Fundamental details regarding the publication of such a huge body of materials are now in course of being settled and adopted. It has proved necessary to furnish additional photostatic copies which may be cut up for use in arranging the duplicate texts in parallel columns and in



FIG. 71.—MANUSCRIPT OF THE COMPLETED COPIES OF ALL KNOWN COFFIN TEXTS

Nearly thirty thousand lines, on 6,825 sheets, fill thirty-seven volumes of manuscript.

bringing together in their proper sections and subdivisions texts of similar or duplicate content.

The arrangement of the page has already been settled. Each page will normally contain two columns of a basic text, placed one at the left-hand edge of the page, the other near the middle. The space thus left available at the right of each such column will be used for additional columns which will contain the variants collected from the numerous originals. The page form as now planned is illustrated in Figure 72, although the smallness of the present volume involves great reduction from the page size of the proposed publication. It is furthermore planned to print all the original rubrics in red.

Publication in vertical columns is dictated by the ordinary ar-

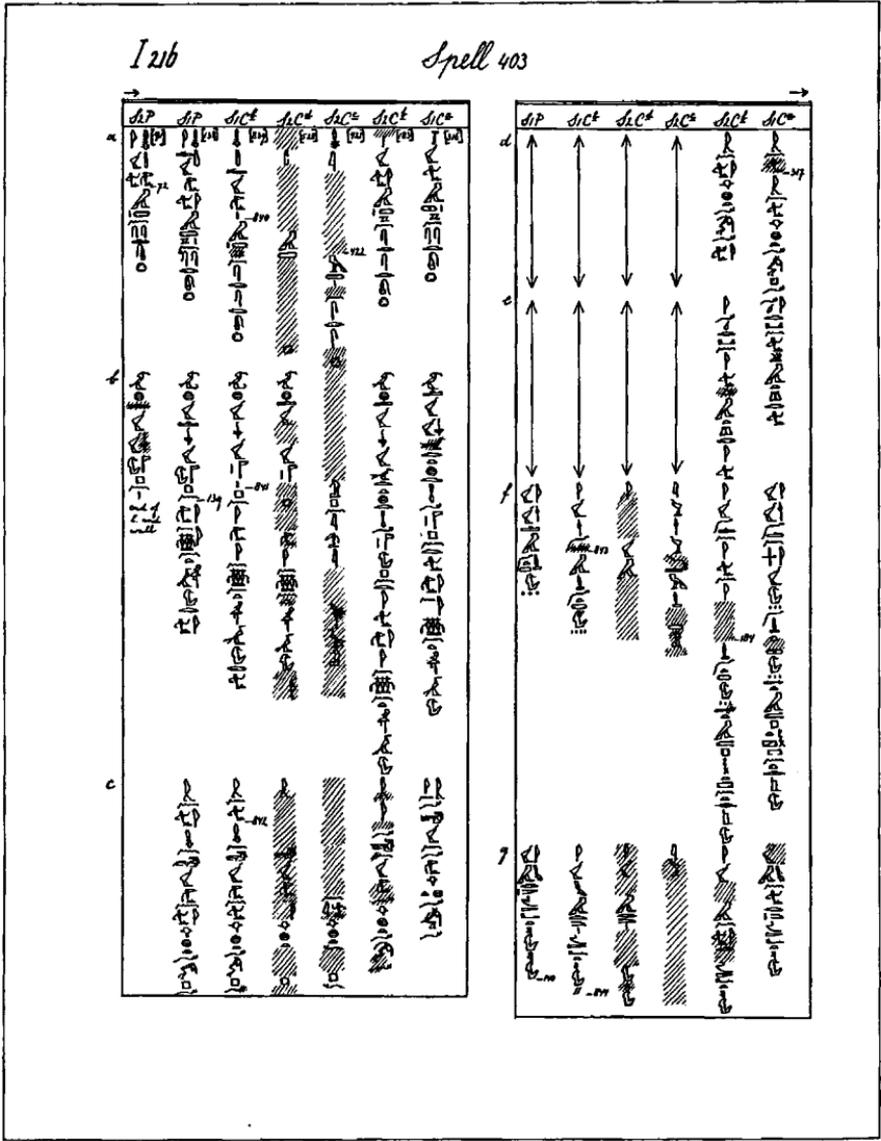


FIG. 72.—REDUCED FACSIMILE OF A COFFIN TEXTS PAGE AS IT WILL BE PUBLISHED, SHOWING ARRANGEMENT IN VERTICAL LINES

rangement of the originals. We shall also face the signs in the direction of the originals. A publication in horizontal lines conceals many variations in the position and arrangement of words and signs. How important these may be is seen from Sethe's comprehensive study of them in a separate volume of his edition of the Pyramid Texts. Much of the work done by Sethe in compiling this volume will be avoided by our arrangement. We put before the modern scholar the whole material in the exact position of the originals. Another advantage of this arrangement is that it makes possible for every student an accurate estimate of the gaps.

The publication will not merely add individual variant readings, but will give each parallel text in full, for (1) to give *all* the variants would probably be even more troublesome than to give the full texts, in view of the endless variations in spelling etc., and (2) to give only a choice of *important* variants, as Naville intended to do in his edition of the Book of the Dead, is too subjective. What is unimportant in our opinion may prove of the utmost importance for future scholars. Even evident corruptions may be interesting.

The Coffin Texts publication will therefore combine the methods used by Sethe for the Pyramid Texts and by Naville for the Book of the Dead. Regarding the important question of *which text should be given in the first column*, the Coffin Texts editors will not always be able to reach a satisfactory conclusion. It was possible for Sethe to give the most ancient text first and to arrange his texts in a chronological order. His pyramids were *dated!* There is no such guide to aid the Coffin Texts editors, and they will have to decide on other grounds which is the best text, whether they can distinguish groups and families of texts, etc. Of course the texts cannot be exhaustively studied before publication, but as much as can be done by a preliminary study of the texts must be done in order to determine as good an arrangement as possible.

One thing is certain: the editors are far from having the archetypes of all texts. All the copies are full of every kind of corruption, though corrections on some coffins show that the ancient copyist occasionally worked with some care.

Besides the volumes containing the original Egyptian text there will be others containing working helps of various kinds, especially

a complete glossary or dictionary of the Coffin Texts, since our copies of them were not completed in time to be included in the great Berlin Egyptian dictionary (see pp. 384-87). It is still impossible to state how many volumes the Coffin Texts will require for their complete publication. It was at first supposed that six would suffice. There is now every indication, however, that the materials will require a larger amount of space, the exact limits of which it would be difficult to estimate.

In summary, the publication will contain:

- I. The original texts (number of volumes uncertain).
- II. Introduction, with lists of originals, discussion of their peculiarities, etc. (one volume).
- III. Translation, with notes (one volume).
- IV. Glossary (one volume).

I cannot leave this project without expressing to Dr. Gardiner and Dr. de Buck my deep appreciation of the faithfulness, devotion, and scientific accuracy with which they have been carrying on the great task. I am sure that these sentiments will be shared by all orientalist everywhere, for the Coffin Texts now constitute the largest important body of original Egyptian sources still remaining unpublished. When they become available in published form, therefore, an important gap in our knowledge will have been filled.

CHAPTER VIII

THE ARCHITECTURAL SURVEY

Looking down the ages from the earliest appearance of man in North Africa, we have thus far in this report touched upon three great genetic stages in course of investigation by the Institute. We saw first the emergence of man as an implement-maker and his advancing conquest of the material world, disclosed by the Prehistoric Survey. Second came the emergence of the earliest civilized society, based on agriculture and cattle-breeding. It was at first purely materialistic, but rose toward conquests in the realm of human conduct transcending the material world and (after 3000 B.C.) to the creation of great works of art. These are found in the Memphite cemetery in tombs now being recorded by the Sakkarah Expedition. Third, we have seen the rise of social responsibility, ideals of conduct, and ideas of a judgment hereafter, expressed in more definite form toward 2000 B.C. in the Coffin Texts, which continued into the eighteenth century B.C. These have now for the first time been completely copied by the editors of the Coffin Texts.

By the conquest of Western Asia in the sixteenth century B.C. Egypt entered upon her Imperial Age. Enormous wealth gathered from Asia and Nubia enabled the pharaohs to glorify their reigns by vast temple buildings which mark a new and splendid chapter in the history of architecture. The writer had felt from the first that the work of the Epigraphic Expedition on the great temple of Ramses III at Medinet Habu (see chap. ix) was making increasingly clear the character of that imposing building as a human document. Its message to us of the present day is to no small extent to be found in the great architectural forms which it bodies forth. As architecture it proclaims in no uncertain terms the age of imperial conquest. As soon as our funds permitted, therefore, an Architectural Survey was organized (cf. pp. 72 f.), to be associated with the Epigraphic Expedition. It was placed under the leadership of Pro-

fessor Uvo Hölscher of Hanover, who had previously studied the great Medinet Habu temple and had published some results of his researches.

Tourist visitors at Luxor, if they cross to the west side of the river and drive westward, after passing the great Colossi of Amenhotep III on the plain will observe toward the left (southwest), farther back from the river, an extensive group of ancient buildings which bears the modern native name of Medinet Habu. In the midst of this group lies the great mortuary temple of Ramses III, the last of the Egyptian emperors, who erected it soon after 1200 B.C. The cliff tombs of the early pharaohs of the Empire, situated in the valley now so familiar to the modern traveler as the place where the tomb of Tutenkhamon was discovered, had soon been found by their royal successors to be too inaccessible to permit the maintenance of the daily mortuary ceremonies which had been customary for thousands of years on behalf of the departed sovereigns. Eventually, therefore, each pharaoh of the Empire built a so-called "mortuary temple" on the western plain of Thebes in a situation more conveniently accessible, where the mortuary ritual might be regularly maintained.

At one time there must have been a very stately line of such temples, extending in general from north to south and stretching ever farther southward as reign followed reign. But when a newly crowned pharaoh began the construction of his mortuary temple he found it much easier to filch building material from the temples of his royal predecessors than to bring the building blocks from distant quarries. In the Nineteenth Dynasty this practice eventually resulted in the complete demolition of some of the earlier temples. The most noticeable example is the magnificent but now vanished temple which once stood behind the Colossi on the Theban plain. The mortuary temple of the last of the emperors, Ramses III, escaped this fate because he had no imperial successors to demolish it. It still stands, therefore, as the best preserved temple of the Egyptian Empire. But the great building complex of which it is the heart and core had never been systematically excavated or architecturally studied.

A glance at a general view taken from the cliffs behind Medinet

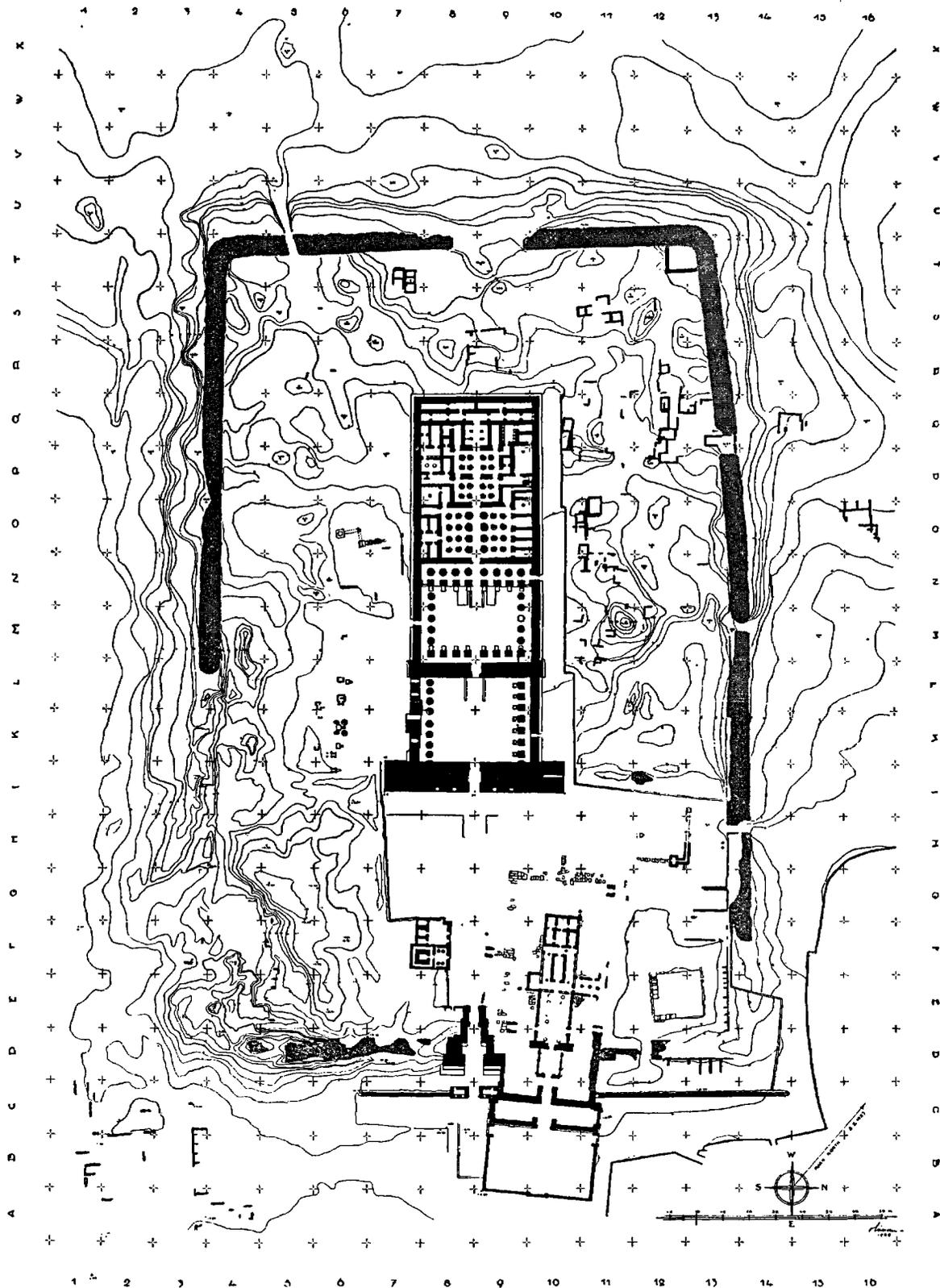


FIG. 73.—GROUND PLAN OF MEDINET HABU AS DISCERNIBLE BEFORE BEGINNING THE EXCAVATIONS

The fortified gate is in the area D-E 8-9, and the first court of the great temple is in I-L 7-10. In the space immediately south (left) of the first court appear two columns, one at each side of a throne.

Habu (Fig. 28) will show the reader that the mortuary temple complex of Ramses III consists of a large inclosure surrounded by a massive protecting wall, within which the rectangular ground plan of the temple itself, recognizable by its lighter color, may be discerned. In Figure 73 the reader will find the ground plan of the whole group of structures as far as it was discernible *before* excavation; the next plan (Fig. 74) exhibits the entire group as the completed excavations have revealed it. It is an impressively large, symmetrically developed group in which the temple, built of stone masonry, occupies the axis in the center and is itself surrounded by other buildings, also rectangularly disposed, all of which are of sun-dried brick. With the exception of the great girdle wall surrounding the whole (Fig. 75), these sun-dried brick buildings are mostly prostrate. When the excavations began, their dismal ruins enveloped the stone temple building in heaps of unsightly débris.

The entire complex is over 1,100 feet long and some 780 feet wide (340 × 240 meters). This makes an area of about 20 acres, exclusive of the spacious quay and the mooring basin in front. The great girdle wall itself incloses a space about 680 by 1,030 feet (210 × 315 meters). It was originally some 59 feet high (18 meters) and almost 30 feet thick at the base. Within this great inclosure the stone temple building is nearly 500 feet long. The task of excavation was therefore a considerable one. The rubbish accumulated around the temple itself was in places as deep as 23 feet (7 meters); elsewhere it sank to much less. On the average it was about 11½ feet deep (3.50 meters). This meant that the great inclosure contained about 280,000 cubic meters of rubbish which had to be removed. Translated into terms of our Décauville tram-car capacity, this meant some 840,000 tram-car loads of material to be removed and dumped at a distance of not less than 650 feet and sometimes over a third of a mile (Fig. 76).

The work of clearance began October 18, 1927, and was not completed until 1932. Some of the architectural problems disclosed involved the re-excavation of parts of Ramses II's neighboring mortuary temple, well known to Nile tourists as the Ramesseum. Furthermore, clearances along the *outside* of the Medinet Habu inclosure resulted in the discovery of the mortuary temple of King

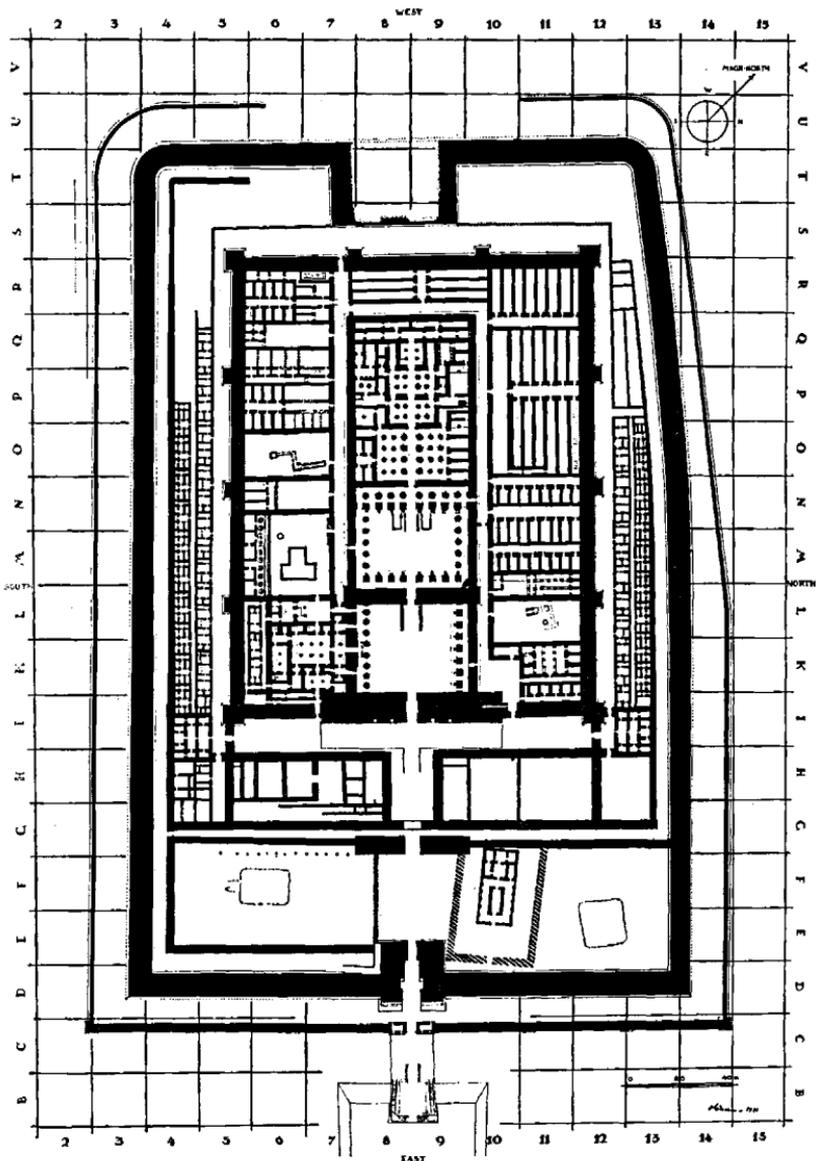


FIG. 74.—GROUND PLAN OF MEDINET HABU AFTER THE SEASON OF 1930/31

Only the west tower of the great girde wall was still to be cleared. The palace of Ramses III lies directly south (left) of the first court of the great temple.

Eye, the successor of Tutenkhamon, and involved the expedition in the complete excavation of this temple also. This clearance revealed some new facts regarding the mortuary temples of the



FIG. 75.—THE EXCAVATION OF MEDINET HABU

This apparently heterogeneous group is actually composed of highly organized crews of men and boys trained in the meticulous technique of excavation. The great girdle wall is seen in the background.

Eighteenth Dynasty and also resulted in the discovery of a statue of Tutenkhamon which had been usurped by Eye (Fig. 77). The estimates given above of amounts of earth and rubbish removed do not include these two excavations at the Ramesseum and the temple of Eye.

The Medinet Habu project, the first systematic excavation un-

dertaken in Egypt by the Oriental Institute, resulted in discoveries of fundamental importance in the history of architecture. It should be emphasized here that our objective was a complete architectural record of the Medinet Habu buildings. It is of importance to bear in mind at this juncture that the excavation of ancient buildings



FIG. 76.—THE FIELD RAILROAD AT MEDINET HABU

The débris was carried in baskets to the dump cars waiting at the Décauville railhead. Thence it went by rail to the dump area outside the great girdle wall.

long ago ceased to be a search for museum treasures which might be brought home for the gratification of museum trustees and an interested public or for sensational exploitation in the daily press. The primary purpose of excavation is to discover every possible

FIG. 77.—STANDING STATUE OF TUTENKHAMON

Discovered by Dr. Hölscher in the mortuary temple of King Eye outside the great girdle wall of Ramses III.



FIG. 77

bit or fragment of evidence still surviving at the excavation site and, having salvaged this evidence, whatever its nature may be, to record and publish it as a part of the assets available to science for all future time. Museum pieces are, of course, welcome, and they were not lacking in the course of this clearance; but they formed an incident, not the main object, of the work.

Turning now to the new light thrown on the history of architecture by the excavation of Medinet Habu, let us examine first the approaches giving access to the place. Outside the great girdle wall, in the axis of the huge complex and directly in front of the fortified gate, the excavation disclosed a broad masonry quay with steps descending to a spacious mooring basin, from the far side of which a canal led toward the Nile (Fig. 78). Though the existence of such canals had been indicated by paintings on Theban tomb walls, the canal at Medinet Habu is the only one the presence of which has been proved. This discovery made it clear that the mortuary temples of the pharaohs were regularly connected by canals with the Nile. Such canals must once have been numerous in western Thebes, but have now disappeared, filled with mud by thousands of years of inundation.

When the Pharaoh landed from his glittering royal barge at the foot of the temple quay he must have been carried in his palanquin up the steps and between the towers of the massive fortified gate into the huge inclosure protected by the great girdle wall (cf. Fig. 78). Hölscher concludes from observations on the ground that this great girdle wall, nearly 60 feet high, was built late in the king's reign and did not belong to the royal architect's original plan. When the king had passed in through the fortified gate, he doubtless felt a sense of security which in earlier years would not have appealed to him as necessary. But we know from an attempt on his life, revealed in the papyrus records of his reign, that before the end came there was ample reason for his desire for security. This fortified gate is a unique structure of which no other example survives. The reconstruction which the Institute's Architectural Survey is furnishing will, therefore, be our only source for any impressions of the appearance of the great imperial fortresses in which the pharaohs of the Egyptian Empire lived.

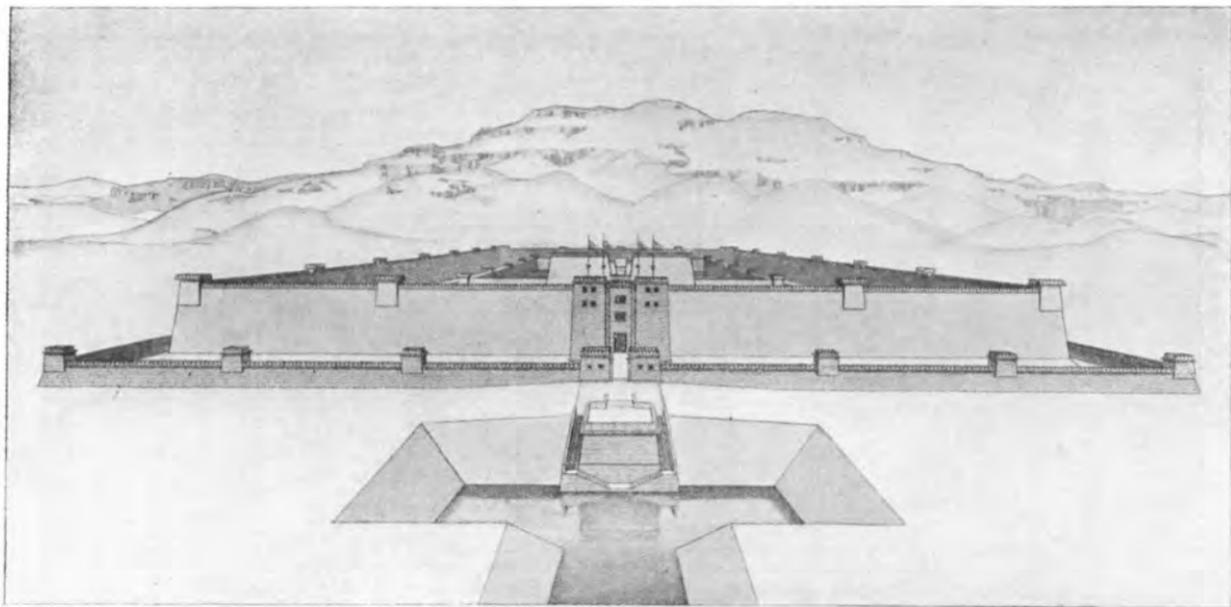


FIG. 78.—THE FORTIFIED TEMPLE AREA OF RAMSES III AT MEDINET HABU. RECONSTRUCTION BY DR. HÖLSCHER

The whole complex is seen against the background of the western cliffs. In the foreground a canal from the Nile terminates in a mooring basin connected by a broad quay with the fortified gate in the center.

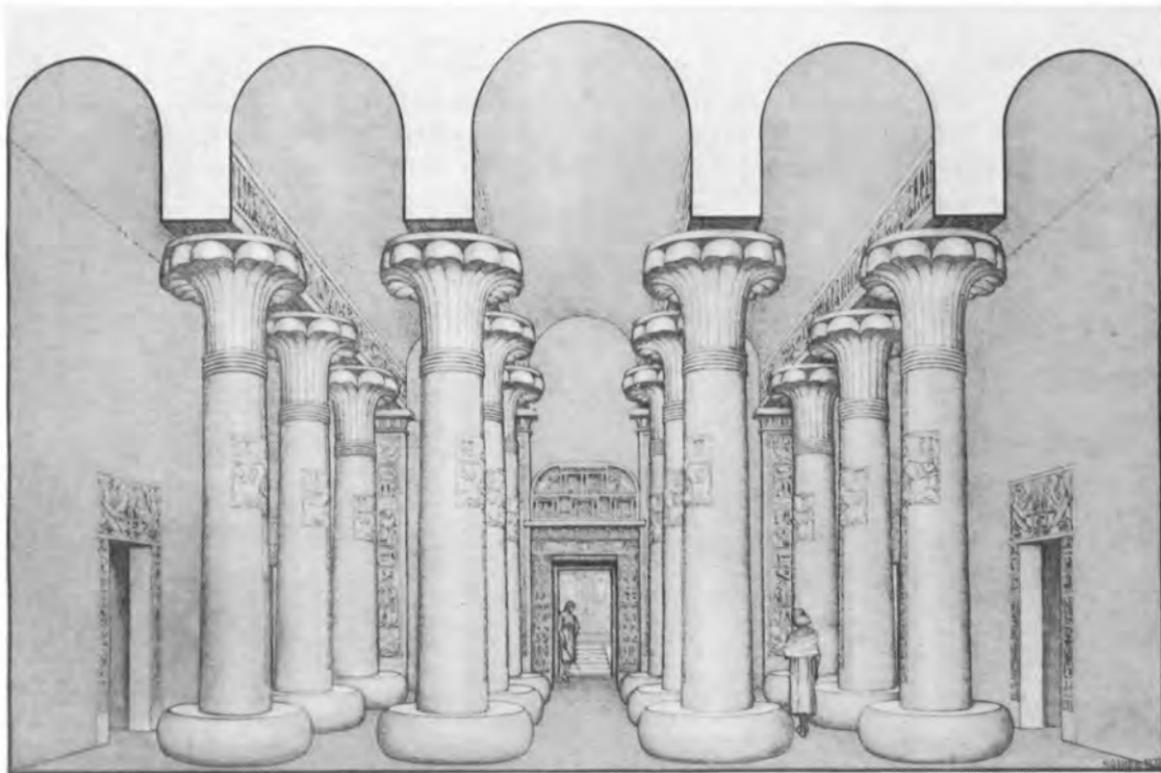


FIG. 79.—THE AUDIENCE HALL IN THE FIRST MEDINET HABU PALACE OF RAMSES III. RECONSTRUCTION BY DR. HÖLSCHER

This palace hall, built soon after 1200 B.C., proved to have a vaulted roof, with a higher vault over the nave and lower vaults at each side—the fundamental roof type in later basilica and cathedral architecture.

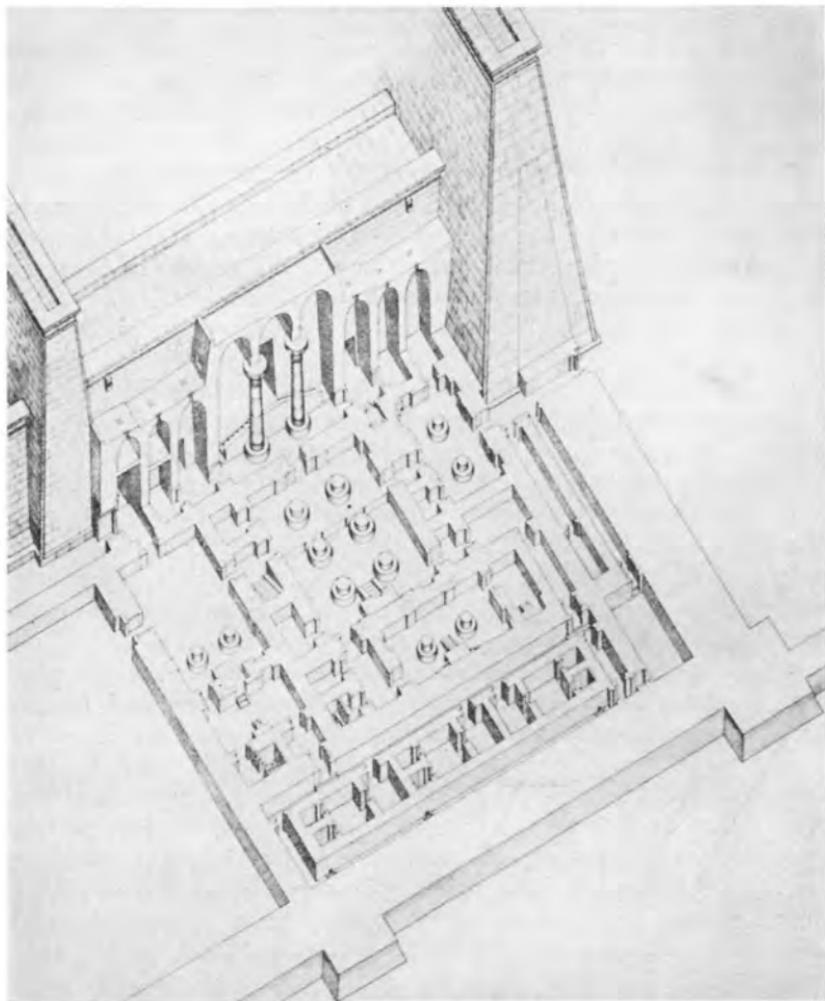


FIG. 80.—THE SECOND PALACE OF RAMSES III AT MEDINET HABU. RECONSTRUCTION BY DR. HÖLSCHER

The roofs of the hall and side rooms at the front, abutting on the first court of the temple, are vaulted and so proportioned as to form a more prominent clerestory than that in the first palace.

The lower story of the fortified gate is of solid stone masonry without a single room; but the second and third stories, also of stone, contain rooms with windows from which there are still delightful prospects across the Theban plain. These apartments transformed the frowning fortress gate into a pleasure pavilion where the Pharaoh was wont to spend his hours of leisure in games and diversions with the young ladies of the harem. Their charming figures are depicted on the walls, playing at chess with His Majesty or presenting him with flowers in exchange for caresses.

Immediately inside this entrance through the great girdle wall there were evidently gardens and groves of shade trees. Beyond lay the temple with its huge pyloned façade; and here the Pharaoh often, and indeed theoretically every day, participated in the temple service. To facilitate his participation in the greater festivals, residential quarters of some kind for the Pharaoh and his household in close connection with the temple were needed. Immediately on the left of the temple entrance, therefore, the Pharaoh built a palace which abutted on the temple. The left, that is, the south, wall of the first court of the temple served both as the side wall of the temple and as the front wall of the palace (cf. Fig. 80). Hölscher's discoveries in this palace (Fig. 79), which was the first portion of the great inclosure excavated, have contributed fundamentally important facts to our knowledge of ancient architecture.

The space available in this survey will not permit any description of the other structures (storehouses etc.) surrounding the temple further than to say that the king inclosed temple, palace, and storehouses together within a heavy wall with salient towers at intervals (see Fig. 74). The palace plan consisted at first of a very simple series of rooms, scarcely adequate for a protracted royal

FIG. 81.—GENERAL VIEW OF THE PALACE OF RAMSES III AT MEDINET HABU AFTER EXCAVATION

Beyond the palace area (in center) stretches the long south wall of the great temple. At the right stands the first pylon, which forms the temple front. Abutting on the back of this pylon we see the south wall of the first court of the temple. This same wall, with its four openings, formed the front of the palace. In the center of the palace the two columns of the throneroom (cf. Fig. 73) are clearly discernible, and farther to the left are remains of baths.



FIG. 81

visit. When the Pharaoh added the great girdle wall, however, inclosing a much larger area than before, he altered the old palace plan and had a new palace erected on the same ground. It contained three suites in the rear for his favorite ladies, his own royal suite in front, and a ladies' salon immediately alongside. These apartments are equipped with bath and toilet conveniences and furnish us the first glimpse, and thus far the only one, into the more intimate arrangements of a pharaonic residence (Fig. 80; cf. Fig. 83).

The superstructure of the first palace was, of course, gone, having been removed by the king himself. That of the second palace, too, had almost entirely disappeared. But the doorposts and lintel blocks of stone were still present; and the bathrooms, likewise built of stone, had largely survived (Fig. 81). As a whole, each palace was of sun-dried brick. As already stated, each abutted on the massive stone masonry side wall of the temple itself, which formed the front wall of the palace. The cuttings in the temple wall for structural articulation of the palace buildings with the temple had left unmistakable traces. These surviving traces have been carefully studied by Hölscher, and with great skill he has reconstructed the superstructure of the audience hall in the front part of each palace. To our great surprise these halls are disclosed as having had vaulted ceilings (see Figs. 79-80), whereas the great stone buildings of Egypt, as exemplified in the temples, all have flat ceilings formed of blocks of stone laid horizontally on the architraves. Such a colonnaded palace hall with vaulted ceiling, the columns and the vaults of which are so arranged as to produce a nave in the center and side aisles on the right and left, is a revelation. It discloses a fundamentally important stage, not heretofore known to us, in architectural history.

That a unique survival such as the second palace should be allowed to lie in unrecognizable fragments and to undergo final and complete destruction seemed exceedingly regrettable. The walls, except at the rare points where they had been of stone, had entirely disappeared, and only the footings remained to disclose the place of each wall on the ground plan. But many of the doorposts were still lying at their original points and in one or two cases were still standing upright (cf. Fig. 81). These doorposts could not be restored to their original

positions without some means of support, and the very pleasing lintels could not be safely mounted on the doorposts without some additional support. After consultation with the Department of Antiquities of the Egyptian government the Institute finally decided to rebuild the palace walls to about breast height with



FIG. 82.—RE-ERECTION OF A FALLEN LINTEL IN THE HAREM

burned brick, so that there could be no confusion between the burned-brick restorations and the early walls, which were all of *sun-dried* brick. The restoration made it possible to set up and engage all the doorposts and to restore the lintel blocks to their places above the doorways (Fig. 82). As a result of this work it is now possible for the visitor to walk through the royal apartments and all the other rooms of the palace from one end to the other. If kept in repair, there is no reason why this ancient pharaonic palace (Fig. 83) should not survive for some centuries longer.



FIG. 83.—THE SECOND PALACE OF RAMSES III AT MEDINET HABU AS RESTORED BY THE ORIENTAL INSTITUTE

View from top of second pylon of the great temple. In the background may be seen the three suites (each with bath) assigned to the harem favorites. In front of them (at left) is the Pharaoh's own apartment, with steps leading up to his throne. The walls, rebuilt to part of their original height under the direction of Dr. Hölscher, now reveal clearly the plan of the palace.

It was long ago observed that the mortuary temple of Ramses II, called the Ramesseum, contained a similar palace. We have long known also that Ramses III copied largely from the architecture of his ancestors. In clearing the Ramesseum for the purpose of comparing some important points of detail, Dr. Hölscher discovered a foundation deposit of a small temple directly alongside the Ramesseum. The objects in this deposit bore the name of Seti I, showing that the newly found sanctuary had been erected by that king, the father of Ramses II. The presence of the small temple, overlooked by earlier excavators, explained for the first time why the Ramesseum was built with its supposedly rectangular corners slightly askew. It was done in order not to interfere with the temple of the builder's father, and was not due to the careless indifference of the architects, as has been so often supposed.

The publication of these architectural researches, covering five years, will furnish the first record of the only complete mortuary temple complex of ancient Egypt; it will, therefore, involve full and careful presentation of the entire body of evidence. To do this will require a folio volume of plates 47 by 60 centimeters and a series of text volumes 30 by 40 centimeters. The latter also will contain many plates, but in the smaller format. Since besides the large structures the survey is to include all of the smaller buildings at Medinet Habu, among which an Eighteenth Dynasty temple is of special importance, it will require six of the smaller volumes to complete the architectural publication.¹ When this has been done, our knowledge of the architecture of the Egyptian Empire will have been substantially extended. It is not easy to resuscitate the spirit of ancient civilization. The architects of Egypt in the grandeur and

¹ Preliminary reports by Dr. Hölscher have been published in "Oriental Institute Communications," Nos. 5, 7, 10, and 15. His folio volume of plates is now in press. The temple of Eye (p. 173), a second Eighteenth Dynasty temple, but outside of the Medinet Habu inclosure, will require a volume of its own, distinct from those mentioned in the text.

Dr. Hölscher is or has been assisted by Hans Steckeweh, Harald Hanson, and Laurence Woolman, architects; H. Bayfield Clark and Edward L. DeLoach, surveyors; Siegfried Heise, artist; Henry Leichter, photographer; Rudolf Anthes, engraver; and Mrs. Keith C. Seele, registrar.

impressiveness of their architectural conceptions and in the breadth and spaciousness of their imagination have left us records of the power and capacity of the human mind such as are not to be found surviving in any other ancient architectural creations, except possibly those of Persia. In the architectural volumes of the Oriental Institute these creative aspects of the mind of early man, as they found expression in architectural forms, will have been preserved for the first time.

CHAPTER IX

THE EPIGRAPHIC EXPEDITION

The largest and most impressive records of the Egyptian Empire are to be found on temple walls in the form of relief scenes and inscriptions. Indeed, as observed on page 198, the wall inscriptions of Egypt probably surpass in bulk those of all other ancient lands combined. We have already discussed the early development of the Institute which permitted us to organize a new staff to begin salvaging the inscriptions of the Nile (pp. 69-73). In order to understand the need of such work, we must first review the efforts of our predecessors.

It is now little over a century since the work of recording the written monuments of Egypt in modern facsimiles began—a work made possible by Champollion's decipherment of Egyptian hieroglyphic in 1822. When the savants of Napoleon's extraordinary scientific commission first saw the temple of Medinet Habu in the dawn of the nineteenth century, there was not one of them who could read the inscriptions they found there; and when Champollion rode into its courts on November 21, 1828, his were the first modern eyes which were able to read the records written on its walls in the long-lost language of the pharaohs. Arriving at Wadi Halfa (the Second Cataract) on January 1, 1829, Champollion began the descent of the Nile, making as he went a preliminary study of that vast array of monuments which his decipherment of six years earlier had enabled him partially to understand. He was fully conscious that it had placed upon him the sacred obligation to copy these monuments and place them permanently among the records of mankind. It was with this journey of Champollion that modern science began the effort to save the long-unintelligible monuments of the Nile.

The great French scholar was well aware that his work could be only a beginning. This was true for a number of reasons, and these

reasons applied also to Champollion's successors for many years—indeed, down into our own generation. There was, in the first place, the vast extent of the monuments to be recorded, coupled with their remoteness from the homelands of the devoted explorers and scientists who have been trying to save them—if not the originals themselves, at least some record of them. The amount of time which such explorers were able to spend in this distant land under earlier conditions of travel and transport was necessarily very limited, as we shall see. At the same time their understanding of the newly deciphered language with which they were dealing was elementary and vague. Finally, modern mechanical aids to speed and accuracy in recording monumental remains and inscriptions, especially the photographic camera equipped with dry plates (or, better, flat films), were not yet available.

Looking for a moment at the length of time which our earlier predecessors could devote to such work in the land itself, we have already observed that the colossal task of preserving the inscribed records of ancient Egypt in modern facsimiles was begun by Champollion at the Second Cataract of the Nile on January 1, 1829. Having passed down river through its imposing series of temples and arrived at Antinoë on September 11, 1829, he wrote: "Mon voyage des recherches est terminé." He had spent nearly eight and a half months at work. The mass of records which his draftsmen had copied under his direction, now available in his four bulky folios,¹ forms an impressive monument, comparable only to the extraordinary body of notes, descriptions, and observations now preserved in his *Notices descriptives*. But when this campaign of eight and a half months is divided into short sojourns among the innumerable tombs and temples of the Nile, the limited time available at each place is surprising. On his return voyage down river Champollion arrived at Thebes to begin work there on March 8, 1829, and he must have left there in August. We learn that he worked only a

¹ J. F. Champollion, *Monuments de l'Égypte et de la Nubie, d'après les dessins exécutés sur les lieux sous la direction de Champollion-le-jeune et les descriptions autographes qu'il en a rédigées*. 4 vols. of plates (Paris: Firmin Didot Frères, 1835-45). The *Notices descriptives* which form the text of the foregoing were published by the same firm in 2 vols. (1844-89).



FIG. 84.—AIR VIEW OF THE NEW ORIENTAL INSTITUTE HEADQUARTERS AT LUXOR. RESIDENCE OF THE STAFF (RIGHT), OFFICES, STUDIO, AND LIBRARY (LEFT)

fortnight in the great temple of Luxor, and his letters would indicate that he had but a few days to spend among the inexhaustible records of the Medinet Habu temple. Apparently the Tuscan commission which accompanied him was more fortunate.

Although the great Prussian expedition under Richard Lepsius spent three years on the Nile, the stay of its members at Thebes was even shorter than that of Champollion. On their voyage down river they arrived at Thebes to begin work late in November, 1844, and left the place about the middle of April, 1845, after about four and a half months. During that period Lepsius was absent for a month and a half on his Red Sea-Sinai journey, so that he personally was actually working at Thebes only a little over three months. The Englishman Wilkinson, whose extraordinary work at Thebes was about as early as that of Champollion and vies with his as a beginning of the great task of recording the monuments of Egypt, seems to have made a more prolonged stay at Thebes, where a ruined house in the necropolis still bears his name. The surprisingly large number of Hay's drawings in the British Museum would indicate that he too spent a longer period there than did Champollion or Lepsius.

Yet Lepsius was fully conscious of the overwhelming extent of the task at Thebes, and he attempted to adapt the character of his work to his limited time. Toward the end of February, 1845, a week before he left on his Red Sea journey, he wrote as follows:

We have now been dwelling in our Theban acropolis on the hill of Kurna for more than a quarter of a year, busily occupied from morning till evening, each in his way, investigating and describing the most important monuments, drawing, making paper "squeezes," and surveying the ground plans of the buildings, without thus far being in a position to close up the work on even one side, the Libyan [western] shore, where indeed there lie before us for investigation no less than twelve temple buildings, twenty-five tombs of kings, fifteen belonging to royal wives or daughters, and innumerable others of highborn private persons. The east side [of the river] with its twenty-six still partially preserved sanctuaries will not require less time. And it is in Thebes, forsooth, more than in any other place, that other expeditions and travelers have worked, especially the French-Tuscan expedition, whose work we have everywhere compared and completed but have not done a second time. Neither do we in the least flatter ourselves



FIG. 85.—THE NEW ORIENTAL INSTITUTE HEADQUARTERS AT LUXOR. ENTRANCE OF THE RESIDENCE BUILDING

that we have at all exhausted the immeasurable wealth of monuments. He who comes after us with increased knowledge and with the results of further advanced science will find new treasures and win new instruction from the same monuments.²

The admirable Wilkinson took the same view. While he speaks with great respect of Champollion and expresses admiration for the decipherer's advance in the understanding of hieroglyphic, he does not hesitate to disagree with Champollion, to criticize his conclusions, or even sometimes to impugn his sincerity.³ It is clear that he understood enough Egyptian as a result of his own investigations to discuss with intelligence and discernment the knowledge of hieroglyphic then available. He says:

With regard to the translation of hieroglyphics, M. Champollion must allow no one is yet sufficiently advanced in the language of ancient Egypt to enable him literally to translate an inscription of any length, or moderately complicated; though a general meaning may frequently be obtained. Time will no doubt do more, and we may hope to see this language interpreted with the same facility as many with which we have been long acquainted. But the steps must be *slow* and cautious; and the only mode of convincing those who still adhere to a contrary opinion, is to trust little to conjecture, or at least to state an uncertainty whenever it exists; to admit and correct errors when discovered; and to settle a fixed rather than a temporary interpretation to the groups, which will answer to their meaning whenever they occur.⁴

This conviction of Wilkinson, written less than nine years after Champollion's decipherment, and repeated by Lepsius fourteen years later, has been constantly verified.

The middle of the nineteenth century saw the advance in knowledge of the writing and language of ancient Egypt continuing, and the camera began slowly to be recognized as a possible auxiliary of the field epigrapher; but the heroic age of Egyptology declined after the Prussian expedition. It was succeeded by the less arduous

² Translated from Lepsius, *Briefe aus Aegypten, Aethiopien und der Halbinsel des Sinai* (Berlin, 1852), p. 270.

³ See J. G. Wilkinson, Esq., *Topography of Thebes, and General View of Egypt* (London, 1835), pp. 55-58.

⁴ *Ibid.*, pp. 57-58.



FIG. 86.—THE NEW ORIENTAL INSTITUTE HEADQUARTERS AT LUXOR. INNER GARDEN, WITH VIEW OF WESTERN CLIFFS THROUGH CONNECTING ARCADE

researches of European savants who wisely and prudently discerned that the slippered relaxation of the scholar's study should now be utilized to digest the formidable body of records which the field campaigns of the great expeditions had provided. There were no more great recording expeditions on the Nile. The advent of Mariette dramatically disclosed the possibilities of excavation; and there began a period, interrupted by the World War, during which first European and then American expeditions excavated ruin after ruin and site after site. Valuable scientific work was done, notwithstanding the fact that such expeditions were always expected to bring home antiquities for the museums which were chiefly or almost exclusively instrumental in carrying on such work.

Meantime the destruction of the Nile monuments, which had been going on since the Christianization of Egypt, especially from the third century onward, continued unabated. Already in Champollion's time the beautiful temple of Amenhotep III which Napoleon's commission had found on the Island of Elephantine had been dismantled to furnish building stone for a government office in Aswan. Even when such vandalism was barred after the advent of Mariette, the ruinous condition of many monuments either resulted in their total destruction or inevitably involved decay and final loss of the records they bore.

It will always remain a very creditable chapter in the history of the Egypt Exploration Fund, now the Egypt Exploration Society, that its responsible leaders early realized the necessity for resuming the work (neglected since Lepsius' day) of recording the monuments in adequate facsimiles before their mutilation went farther or they succumbed altogether to destruction. Many a monument which has since perished is preserved to us in the invaluable plates of the archeological survey carried on by this society. Devoted efforts also on the part of individual scholars visiting Egypt to copy the perishing records resulted in the publication of impressive groups of documents. Among these scholars the most notable were Brugsch, Mariette, De Rougé, Dümichen, Piehl, Griffith, and Sethe. In the early nineties, after Maspero returned to France, Jacques de Morgan assumed control of the Department of Antiquities. With commendable wisdom he launched a plan for a complete and systematic



FIG. 87.—THE NEW ORIENTAL INSTITUTE HEADQUARTERS AT LUXOR. THE WESTERN CLIFFS OF THEBES SEEN THROUGH AN ARCHED WINDOW

record of the monuments, beginning at the First Cataract and proceeding down river. The project was continued only as far as Kom Ombo. No attempt was made to produce facsimiles; and serious errors crept in, many of which were due to the use of hieroglyphic type. The introduction of such type, a convenience very useful in its place, has unfavorably affected the quality of our epigraphic publications and contributed essentially to a regrettable lack of paleographic accuracy in the publication of Egyptian documents.

The writer became more fully aware of this situation when in 1895 he undertook to organize a corpus of the historical documents of Egypt and to translate them into English. From the beginning of this enterprise and throughout the ten years spent upon it he found himself very much hampered by the fact that the existent copies of this huge body of records, as published in hieroglyphic, were in the vast majority of cases purely preliminary editions, often incomplete because consisting of excerpts only, and with few exceptions excessively inaccurate. At that time the records of the Deir el-Bahri Temple at Thebes were in course of publication by the Egypt Exploration Society, and to this day these Deir el-Bahri volumes form the only adequate publication of the wall records of an Egyptian temple. If we include the *architecture* also, however, we must exclude even Deir el-Bahri and say that as a cultural monument there is not a single completely published Egyptian temple. In the course of his work on the historical records of Egypt, therefore, the writer was obliged in each instance to reconstruct a basic text by combining and merging all the available old copies and publications, then collating the result with the original if possible, otherwise with photographs. It was especially in the use of these photographs that he became aware of the distressing amount of damage suffered by the monuments since the early recording expeditions had worked upon them. When the historical corpus was completed in 1905,⁵ the writer had reached the firm conviction that it was a supreme obligation of the present generation of orientalists to make a comprehensive effort to save for posterity the enormous body of ancient records still surviving in Egypt.

⁵ J. H. Breasted, *Ancient Records of Egypt*. 5 vols. (Chicago: University of Chicago Press, 1906-7).

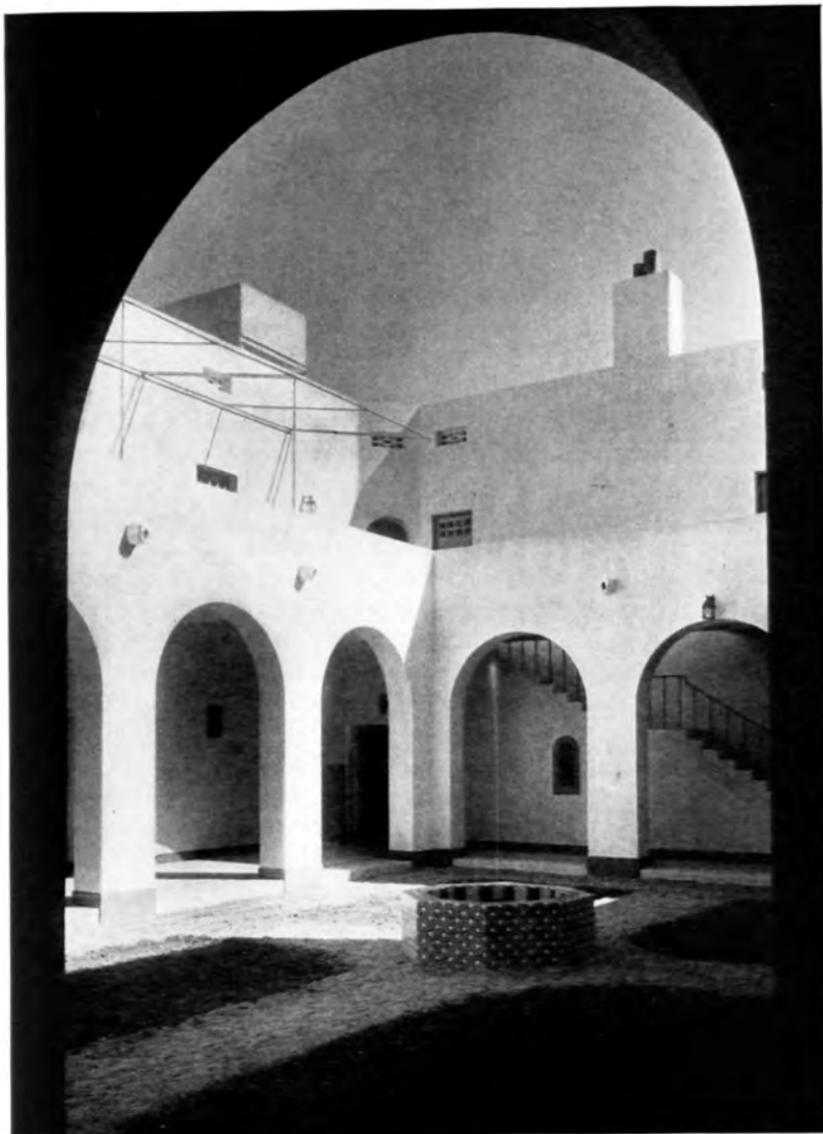


FIG. 88.—THE NEW ORIENTAL INSTITUTE HEADQUARTERS AT LUXOR. A CORNER OF THE PATIO IN THE RESIDENCE BUILDING

Although the pictorial character of Egyptian hieroglyphic makes error easy to the modern epigrapher, just as it did to the ancient draftsman, the malady of incorrect copying and publication is not confined to editors of the inscriptions of Egypt. Reference has already been made (p. 13) to Mommsen's great corpus of Latin inscriptions. Its earlier sections, as published, are so full of errors that many of the inscriptions which they contain must be done over again. It would not be wholly just to hold the earlier editors entirely responsible for this regrettable situation. In beginning the task of salvaging the enormous mass of written records on stone left us by the ancient world, our predecessors were confronted by a great and technically complicated responsibility, in meeting which they had had no experience beyond the traditional habit of making notebook hand copies, perhaps reinforced by a paper "squeeze." They could hardly be expected to realize the insufficiency of this method. In spite of it they accomplished a prodigious amount of invaluable work which will always remain a heroic achievement. The inevitably temporary and provisional character of the early publications, however, made it evident that more highly developed organization, combined with better equipment, improved processes, and especially *much more time*, must be brought to bear on the great problem of salvaging the ancient records still surviving in the Nile Valley—a body of documents *in situ* probably exceeding in bulk those of the entire remainder of the ancient world.⁶

The organization of an expedition to begin this great work has already been recounted (pp. 69 ff.). Its success in carrying out the difficult and exacting task has been due in the first place to the untiring devotion of my old friend and former student, Professor Harold H. Nelson. To that success the original group of epigraphers—Dr. Caroline Ransom Williams, Dr. William F. Edgerton, and Dr. John A. Wilson, all former students of mine—also contributed very substantially. Without the loyal aid of this group the successful inauguration of the great series of *Medinet Habu folios* would have been impossible. Similar co-operation has been

⁶ The foregoing portion of this chapter is drawn, with slight modifications, from the writer's Foreword in *Medinet Habu*, I ("Oriental Institute Publications," VIII [Chicago, 1930]), ix-x.



FIG. 89.—THE NEW ORIENTAL INSTITUTE HEADQUARTERS AT LUXOR. THE STUDIO

furnished by the later group of epigraphers, Dr. Keith C. Seele and Dr. Siegfried Schott. Not a little of the credit for the high quality of the Medinet Habu plates is due to the artists: Alfred Bollacher, for many years one of the leading archeological artists; Virgilio Canziani, long chief cartographer in the Egyptian government's Survey Department; J. Anthony Chubb; Leslie Greener; G. S. Mileham; and Donald N. Wilber. As photographer the lamented John Hartman was succeeded by A. Q. Morrison, whose place has since been taken by Henry Leichter.

Among the many temples on the Nile awaiting adequate record, probably that of Ramses III at Medinet Habu was the one most needing attention. Bearing on its walls the earliest known representations of European peoples and, together with the cuneiform tablets of Asia Minor (cf. p. 78), revealing in its inscriptions the earliest recorded chapter in European history, this temple is of outstanding historical importance. It was therefore selected as the first great monument to be attacked. But it is only one among many memorable tokens of Theban grandeur. In view of the vast body of documents still awaiting final and adequate record at Thebes, it was obviously wise to provide substantial buildings to serve as headquarters there. In the summer of 1924, therefore, a site near Medinet Habu was selected for the erection of buildings to furnish living-quarters and workrooms for an epigraphic staff (see Fig. 28).

We have already discussed the rapid expansion of this Theban plant and its recent shift to permanent fireproof buildings at Luxor on the east bank of the Nile (pp. 69-73 and 99-102). The comfortable home (Figs. 84-88) and well equipped workrooms (Figs. 89-90) there provided for the members of the expedition, with a complete Egyptological library (Fig. 91) constantly accessible, have transformed the task of salvaging the ancient records of Egypt, as contrasted with the situation of the great recording expeditions or, indeed, of any of our predecessors in this field. In the library the members of the expedition can turn at any moment to the complete record of our knowledge of the Egyptian language and writing, which has been steadily growing since Champollion's day and especially since the eighties of the last century. Combined with the highly developed and much more efficient modern methods de-



FIG. 90.—THE NEW ORIENTAL INSTITUTE HEADQUARTERS AT LUXOR. THE PHOTOGRAPHIC LABORATORY



FIG. 91.—THE NEW ORIENTAL INSTITUTE HEADQUARTERS AT LUXOR. INTERIOR OF THE LIBRARY

scribed below, this knowledge has at length placed the modern epigrapher in a position where it may be said that his copies record all that it is humanly possible to discern on the broken and weathered surface of the wall. This is inevitably far more than we could expect in the copies of our predecessors, working, as they did, with more limited knowledge and relatively primitive methods.

Improved mechanical equipment, especially in photography, has placed the modern recording expedition in a position of enormous advantage as compared with its predecessors in this field. Enlarging cameras giving us enlargements nearly a meter square if we need them, portable electric lighting outfits, and, not least, the automobile, a newcomer in the Orient (cf. Fig. 52)—all these and many other modern devices are now available. Moreover, it cannot be said that these mechanical advantages have heretofore been fully brought to bear upon the enormous task of saving for posterity the perishing records of Egypt.

Nevertheless, however valuable the camera may be, the current impression that a mechanical photographic record is sufficient is fundamentally incorrect. The photograph does indeed reproduce the plastic character of the sculptured document as no other sort of copy can do it; but the photographic record is seriously deficient. Any straight line carved on the face of a stone wall, whether incised or in relief, largely and indeed often *wholly* disappears in a photograph if the straight line in question is parallel with the rays of light illuminating the wall during the exposure. No matter at what angle the light falls upon the sculptured wall, therefore, there are always many lines which are wholly or partially lacking in the photograph. The sculptured lines which are adequately recorded in the negative, especially in photographing the flat reliefs produced by the ancient Egyptian sculptors and draftsmen, are only those lines which in greater or less degree lie transversely across the path of the rays of light falling on the wall. In that case the illumination throws a high light on one side of the transverse line and a shadow on the other, producing contrasts which thus emphasize the line and give it a plastic character and sharp definition. On the other hand, all lines lying exactly or nearly in the same direction as the path of the rays of light receive no such high lights and cast no such shadows,

because the light falls on *both sides* of such lines, which consequently are not differentiated from the adjacent plane surface and therefore tend to disappear or do indeed wholly vanish on the photographic record. In order to secure all that the camera might record, it would be necessary to take at least eight negatives of every inscription, each with a different illumination—that is, with the light (while cut off from all other directions) coming from top, bottom, right, left, and diagonally from each of the four corners. Even a group of eight such negatives would not record all that the wall discloses to the eye of the trained epigrapher, able to read and interpret the inscription; for a badly weathered inscription on stone contains much which is visible to the trained and experienced eye, but which nevertheless is too faint and confused to be recorded photographically.

The photograph, then, furnishes an invaluable partial record which must be supplemented and completed by the discerning eye of the experienced orientalist who can read the inscription. But it is hardly to be expected that the orientalist, however skilled in epigraphy, should be a sufficiently good draftsman to make a satisfactory facsimile of all that he might add to the photograph. He must be aided by the best available artist. The ideal recording system consequently must unite in one record three things: the speed and accuracy of the camera, the reading ability of the experienced orientalist, and the drawing skill of the accurate draftsman. It is this system, gradually developed by long experience, which the Institute is now applying.

The fundamental principle governing the process is this: that the final copy shall form a record of everything now visible on the wall. That is to say, every line or portion of a line now visible on the wall shall be recorded in the copy in a solid black line; and, no matter how broken or fragmentary the line may be, the portions of it which are carried over into the copy shall be only those still preserved on the wall, and no more. Any sign or character only fragmentarily preserved on the wall, even though the preserved fragments make it perfectly certain what sign we should recognize, is never to be completed by the copyist in a solid black line. If the

editor deems it advisable, he may complete such a sign, but only in dotted line.

However simple this principle may appear, its application has meant the gradual development of an elaborate technique, consisting of a series of stages as follows:

1. The sculptured relief scene or inscription on the wall is first divided into a series of rectangles of such size that when each rectangle is photographed (Fig. 92) on an 8×10-inch plate the individual signs and characters will not be too small to be easily recognized and will be sharp enough to permit great enlargement.

2. When the negative is ready, the photographer produces an enlargement on a scale sufficiently liberal so that it will be one-fourth to one-third larger than the final printed plate which is to appear in the publication. While the modern equipment in our photographic laboratory at Luxor could produce enlargements a meter across if necessary, they would be too inconvenient to handle. The enlargement actually produced does not usually exceed 50 or at most 60 centimeters.

3. With the preparation of the enlargement the first stage of the photographer's work is completed. The enlarged photograph is made on especially prepared sensitized paper with a surface sufficiently hard to receive a drawing either in pencil or in India ink. With the enlargement fastened to his drawing board the draftsman then goes to the temple wall, where in the presence of the original he traces in pencil on the photograph all that he can see, especially things which are visible to him but which are not recorded in the photograph (Fig. 93).

4. The artist then carries his penciled photograph back to the drafting-room (see Fig. 96), where he finds diffused northern light and every modern device for successful draftsmanship. There, with waterproof India ink, he carefully retraces the penciled lines which he had inserted on the face of the enlargement in the presence of the original. When he has finished, the result is an India ink drawing combining the rapidity of the photographic process with the artist's discernment of a good deal of additional material and his skill in drafting all these elements.

5. At this stage the photographer re-enters the situation. The

photographic enlargement, bearing the India ink drawing, is returned to him and he submerges it in a bath of chemicals which bleach out the photograph until it disappears. Since the waterproof India ink is impervious to this bath, the resulting product is an India ink drawing on pure white paper. A drawing produced in



FIG. 92.—PHOTOGRAPHER AT WORK AT MEDINET HABU

this way has enjoyed the decided advantage of the speed of the photographic process. The slight optical distortion which is undoubtedly present around the margins has no epigraphic significance whatever, and it is not sufficiently great to affect the artistic quality of the lines of relief sculpture.

6. It will be noticed that thus far the process has not involved at any point the reading ability of the orientalist. Neither the photog-

THE EPIGRAPHIC EXPEDITION

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rapher nor the artist can read the inscriptions. Notwithstanding the elaborate additions which the artist has inserted on the face of the photographic enlargement, there is still much in the inscrip-



FIG. 93.—ALFRED BOLLACHER, ONE OF THE ARTISTS OF THE EPIGRAPHIC EXPEDITION, AT WORK AT THE MEDINET HABU TEMPLE

He is tracing on the face of an enlarged photograph the same inscription which he has before him on the original wall, producing a preliminary facsimile ready for correction.



FIG. 94.—SIX EPIGRAPHERS, MOUNTED ON LADDERS, PROOFREADING THE RESULTS OBTAINED BY THE ARTIST IN HIS PRECEDING STUDY OF THE WALL

The epigraphers, being able to read the inscriptions, correct the work of the artist and by repeated checking and study of the original wall produce accurate facsimiles.

tions and in the archeological detail of the sculptured reliefs which the photograph has not recorded nor the artist observed. The artist has, moreover, always made some errors, no matter how accurate a draftsman he may be. It is imperative, therefore, that the ability

of the *epigrapher*, an orientalist who can read and understand the inscriptions, should be brought to bear upon the India ink drawing which the photographer and the artist have prepared. One of our early problems was to devise some means by which the inked drawing might be corrected without injuring it. To take it out to the wall, where it would be exposed to the strong winds of Egypt, to dust, to flies, to soiled fingers, to smudgy lead pencils, and to various accidents on a high ladder or a lofty scaffolding, would mean its speedy destruction. Some method of producing facsimile copies of the drawing was therefore necessary and eventually proved simple enough. The photographer now places the India ink drawing face down on a thin brown sepia paper in a large printing frame. Exposure to the bright Egyptian sun produces from the drawing a very accurate negative in white lines on the brown paper.

7. From this thin paper negative are made ordinary architectural blueprints. Such a blueprint copy is then cut up into small sections, each of which is pasted in the middle of a sheet of paper of about normal typewriter size (see Fig. 95). On a group of twenty or thirty such sheets, bound in a loose-leaf cover, the epigrapher can carry in his hand an entire drawing and have available on each sheet an ample margin of white paper for the insertion of his corrections.

8. Before beginning to enter corrections on these sheets the epigrapher studies the inscription carefully and familiarizes himself with its content. This he can do in the workrooms of the expedition, with constant consultation of the library for comparison with similar inscriptions or for studies of the use of a word about which he may be uncertain. The whole recorded body of knowledge accumulated by oriental science and available in the library may be brought to bear on the understanding of the inscription. It is not until this stage is reached that the epigrapher carries his sheaf of correction sheets out to the wall for exhaustive comparison there—or, to use the epigrapher's technical term, for "collation"—with the original.

9. A drawing so subdivided can be readily handled on a tall ladder or a high scaffolding. Standing thus in the presence of the original on the wall (Fig. 94), the epigrapher is able to enter on the

margin of each sheet all the additions and corrections which his reading ability enables him to discern. It is a long and laborious task. When he has finished, the section of blueprint in the middle of the sheet, with diverging lines each leading to a remark or correction, looks like a many-spoked wheel or an elaborate spider's web (Fig. 95).

10. The sheets on which the epigrapher puts his new data are called collation sheets. In the Institute's work it has been customary for at least two different epigraphers, and sometimes more, to make collations or corrections in the presence of the original. If it happens that these scholars are unable to agree on the exact reading of a sign obscured by damage or weathering of the wall, the opinions of both are duly recorded on the margins of the collation sheets. Other information of value, suggestions, comparisons with related inscriptions, bits of translation, etc., are likewise noted on these sheets, which thus become increasingly valuable for the future editing and understanding of the inscriptions and reliefs. Much of this material will be utilized in preparing for publication the textual notes on the inscriptions.

11. It will be apparent to the reader that the process of inserting on the drawing the additions and corrections furnished by the epigraphers is a long and laborious one. The original India ink drawing, which has meantime been safely reposing in a steel filing cabinet, is brought out. With this and a sheaf of collation sheets before him, the artist sits day after day in the drafting-room (Fig. 96) entering on the face of the India ink drawing the epigraphers' hundreds of alterations and additions. When he has completed this long task, he hands the whole body of materials back to an epigrapher.

12. The epigrapher then sits down to check every change or addition. In the case of an inscription which has suffered considerable damage or weathering, this process of rechecking or recollating may have to be repeated a number of times. Nothing is recorded on the finished drawing which has not been recognized on the wall by a draftsman and at least two epigraphers. Eventually the errors are eliminated, in so far as this is humanly possible. The drawing has thus become a facsimile of the wall, reproducing the



FIG. 96.—AN ARTIST OF THE EPIGRAPHIC EXPEDITION AT WORK IN THE STUDIO (CF. FIG. 89) OF THE NEW LUXOR HEAD-QUARTERS

original plastic surface of figures and characters carved into the face of the wall as accurately as may be done by inked lines on a flat surface.

13. It sometimes happens that an earlier scholar has made a copy of a given inscription and that the wall has since then suffered further damage. It is therefore necessary, as one of the final steps, to compare our exhaustive modern copy with any available publications by our predecessors. No such early copies can ever be neglected. All the material which they furnish is to be included in the Institute publication. Our notes will indicate fully the source of any such insertions.

14. The drawing is now finally ready for the photo-engraver and printer. It would have been very gratifying to the Institute if it had been able to print its plates in America, but the state of colotype printing in the United States—especially collotype color printing—has not yet permitted us to print these plates in this country. In spite of the fact that the United States government exacts a heavy import duty on such materials, they have thus far all been printed abroad. When the exhaustively corrected India ink drawing has been transformed by photographic means into a printer's plate and an edition of five hundred impressions has been printed off, the inscription on the ancient Egyptian wall has thus been multiplied five hundred times and may therefore be said to be reasonably safe.

The temple of Medinet Habu, as a glance at the general view (Fig. 97) discloses, contains many square yards of masonry wall surface. The temple is nearly 500 feet long. Every square foot of its vast wall area, both within and without, is covered with inscriptions and reliefs. Each scene (Figs. 98-99) and each long inscription (Figs. 100-101) forms a rectangular unit to be treated by itself as a coherent whole, and each one of these units is on a different scale. The selection of a size of plate for the publication depended on adjustment of these varying factors. It was a matter of long and wearisomely repeated experiment. A folio size of 47 by 60 centimeters was finally adopted, and the first plates were sent to the printer in May, 1928. Since then two folio volumes, containing to-

gether 130 plates, have appeared.⁷ A third volume is soon to go to press. How many folio plates will be required for this publication is



FIG. 97.—GENERAL VIEW OF MEDINET HABU, LOOKING SOUTH

In the foreground may be seen the fortified inclosure within which stand the ruins of Ramses III's temple and other buildings of both earlier and later date. The dark mounds of earth surrounding the temple are the remains of the massive girdle wall of unburned brick erected by the king to convert the site into a fortress as well as a temple. In the distance flows the Nile. Beyond it rise the cliffs bounding the Nile Valley on the east.

⁷ *Medinet Habu*, Vols. I-II ("Oriental Institute Publications," Vols. VIII-IX [Chicago, 1930-32]), by the Epigraphic Survey. See also Dr. Nelson's preliminary reports in "Oriental Institute Communications," Nos. 5 and 10, and Dr. Wilson's paper on "The Language of the Historical Texts Commemorating Ramses III," *ibid.*, No. 7, pp. 24-33.

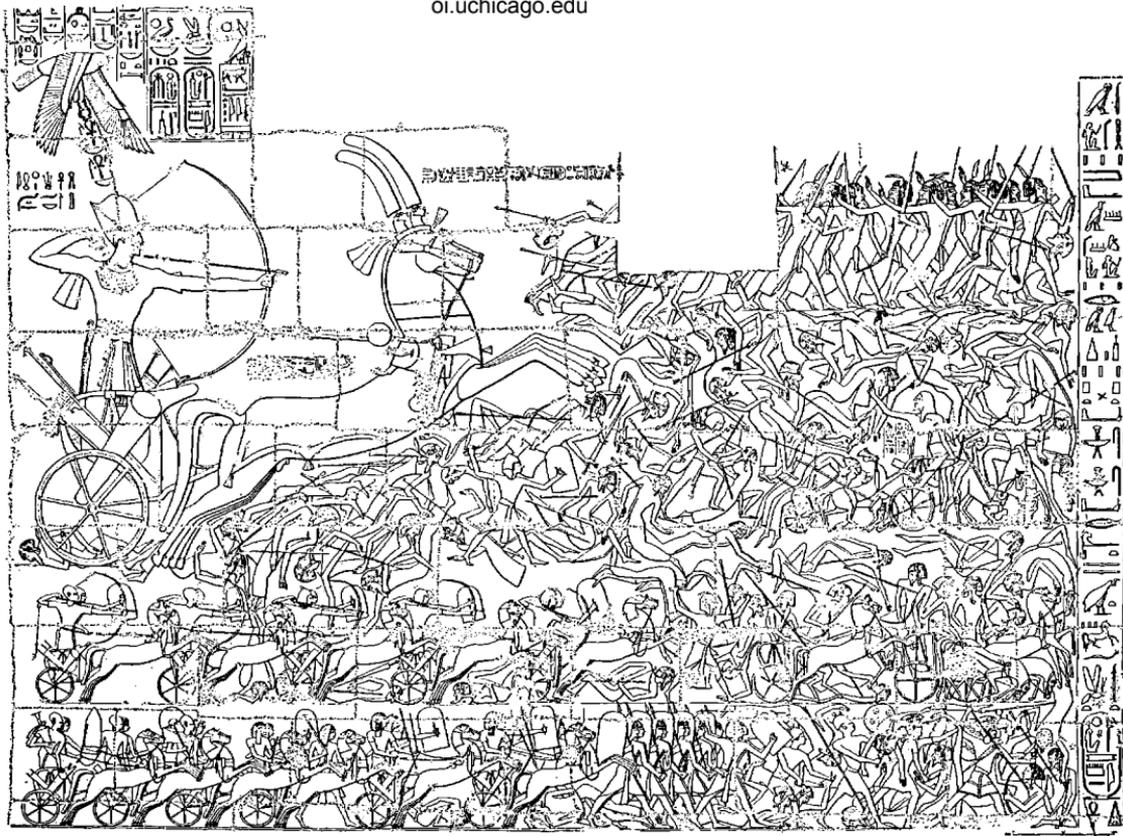


FIG. 98.—RAMSES III PURSUING FLEEING LIBYANS

The first three chariots in the lowest register are occupied by royal princes, each with his shield-bearer beside him. Before them march Egyptian infantry, preceded by Philistine and Sherden mercenary troops in the Egyptian service.

still somewhat uncertain, but there will probably be about five volumes more. Accompanying these will be a number of smaller folio volumes containing the necessary discussion of the materials in the folios.



FIG. 99.—LIBYAN CHIEFTAINS FLEEING BEFORE THE PHARAOH'S ONSLAUGHT
Detail from upper right corner of the scene shown in Figure 98

The space available in such a survey as the present volume obviously does not permit even a summary statement of the results accruing from this work. The outstanding objective is, of course, the publication of our facsimiles in permanent form. For the first time these early human records at Medinet Habu may be regarded as having been preserved for posterity. They reveal to us the contact of Egypt with the tremendous *mêlée* of Asiatic peoples caused by the Indo-European invasion of Western Asia, the devastating



FIG. 100.—RAMSES III'S GREAT HISTORICAL INSCRIPTION OF THE YEAR EIGHT, AS RECORDED BY PHOTOGRAPH

This long text contains our chief account of the attack made upon Egypt by northern invaders during Ramses III's reign. The historical portion occupies only about one-third of the whole, the remainder being florid laudation of the king's prowess and of his benefactions to his country.

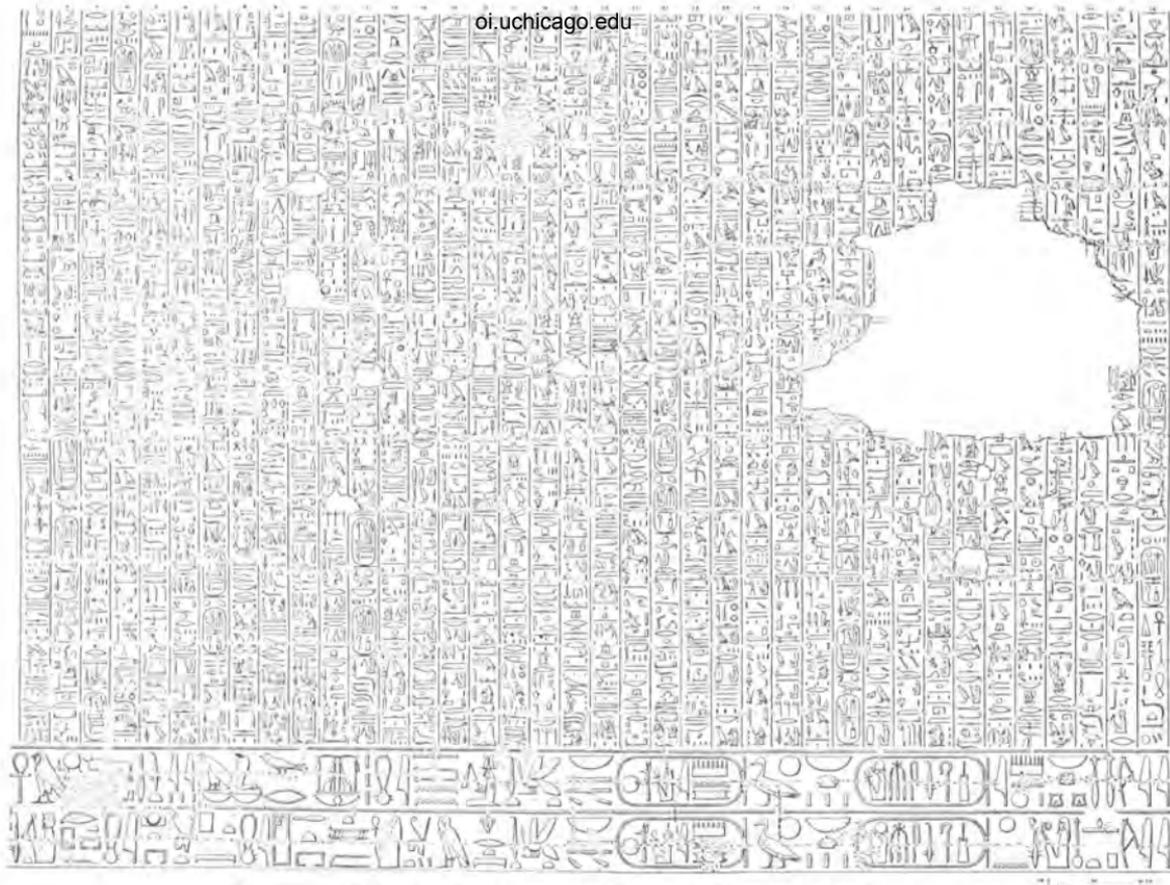


FIG. 101.—THE SAME INSCRIPTION IN FINISHED DRAWING, AS PUBLISHED

The plate in *Medinet Habu*, Volume I, is more than four times as large each way as is this reproduction

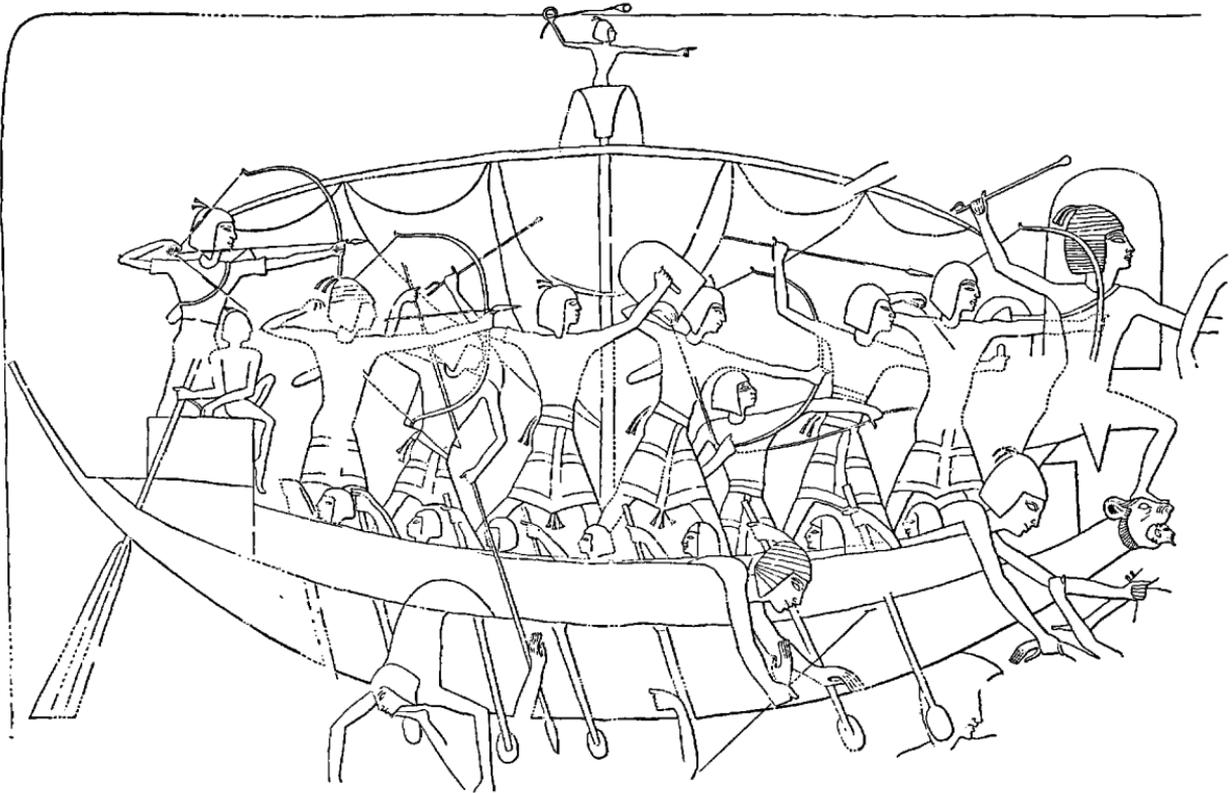


FIG. 102.—AN EGYPTIAN WARSHIP. THE FIRST DRAFT

This shows work which, doubtless at the instigation of some superior official artist, was rejected in favor of the more animated poses shown in Figure 103.

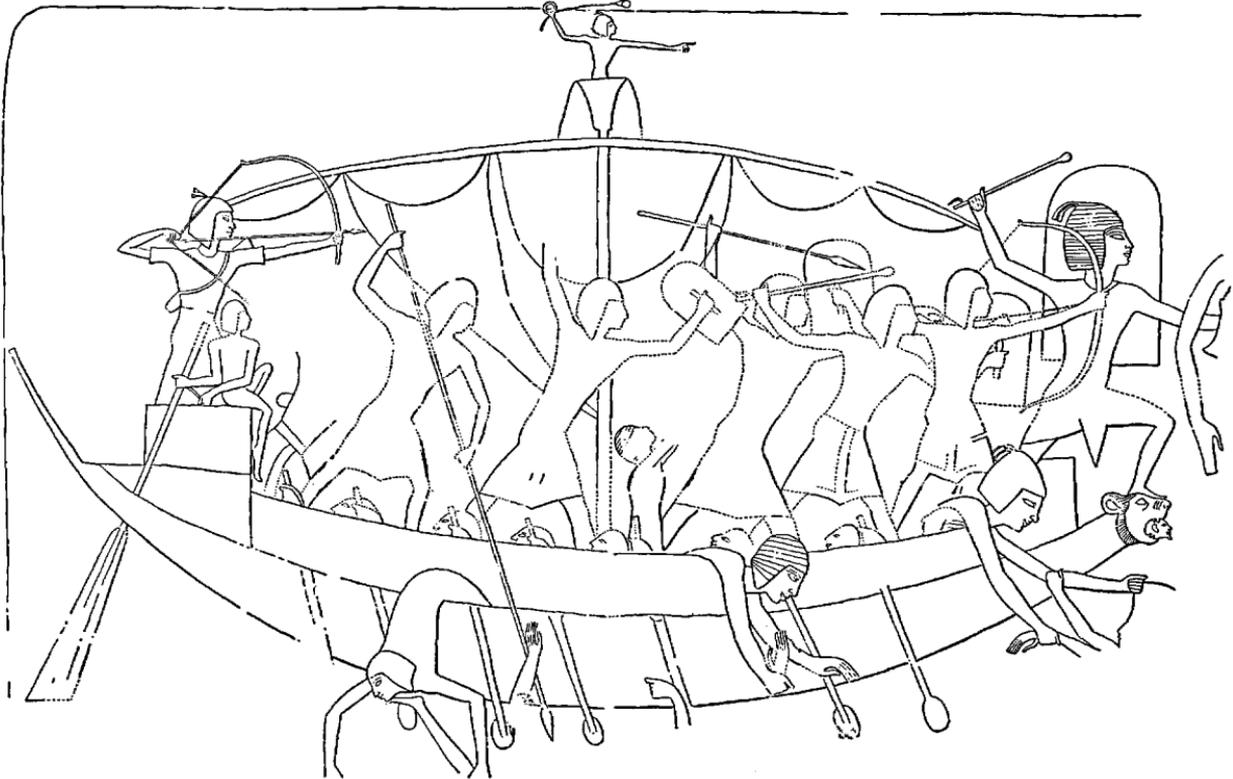


FIG. 103.—THE EGYPTIAN WARSHIP OF FIGURE 102, BUT SHOWING ONLY THOSE LINES WHICH CAN WITH REASONABLE CERTAINTY BE ASCRIBED TO THE SECOND DRAFT

The carving still surviving on the wall is represented in solid lines, while the partially completed figures are filled out in dotted lines. Enough of this revised and final draft remains to show that the composition has gained greatly in life and energy.

overthrow of the Hittite Empire about 1200 B.C. (see p. 273), and the great migratory movements that carried the Etruscans out of Asia Minor and the Aegean region into Italy. The Institute's oper-

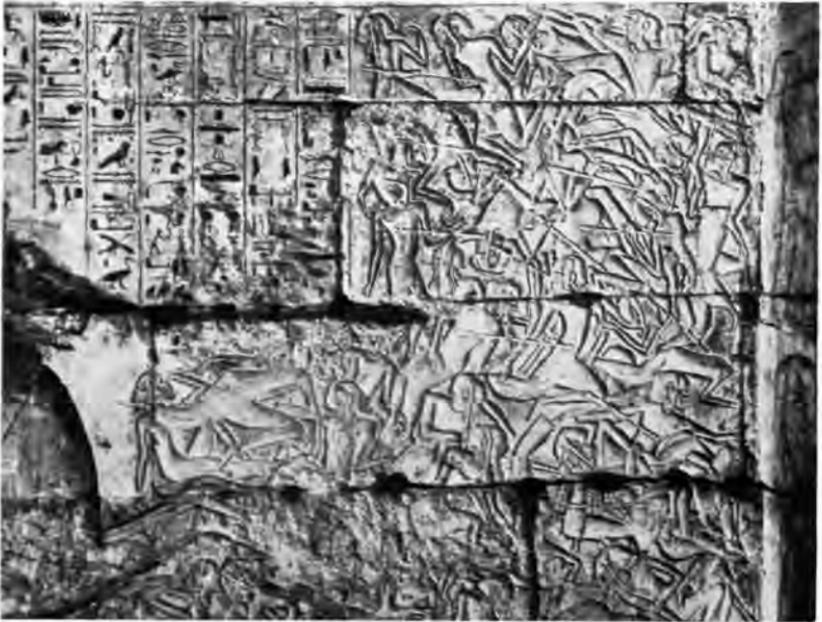


FIG. 104.—A BATTLEFIELD COVERED WITH DEAD AND DYING LIBYANS

It must be remembered that, in depicting such a scene, Egyptian artistic convention required the beholder to look down upon the surface of the field at the prostrate enemy and at the same time to look across the field at those still standing. Some of the Libyans depicted here are lying on the ground, while others are standing. The colors with which this relief was painted are well preserved in the original.

ations at Medinet Habu are an outstanding example of the bearing which investigation in one region may have upon our knowledge of another. With its expeditions covering both Egypt and Western Asia, the Institute is in a particularly favorable position to make the most of such possibilities.

The minute study of the walls which underlies all this work has,

of course, resulted in the discovery of a host of details not heretofore noticed. They reflect new light upon the whole range of an-



FIG. 105.—LINE DRAWING OF THE SCENE SHOWN PHOTOGRAPHICALLY IN FIGURE 104

Though the plastic quality of the photograph is missing, the details of the composition are much clearer here. The drawing contains some suggestion of the painted details also, such as the pools of blood between bodies and the flowers growing among the slain. The background is red to represent the desert land. The distractions arising from injuries to the wall are less obtrusive in the drawing than in the photograph.

cient life and civilization. Two examples may be mentioned. In the huge tableau of the earliest naval battle of which we have any representation, an Egyptian warrior, formerly supposed to be wielding a spear, is really manipulating a rope (see Fig. 102) traces of which can be followed to the neighboring hostile vessel, where it

terminates in a grappling iron, the oriental ancestor of the Roman *corvus*. In a very much defaced relief an Egyptian scribe or official, formerly supposed to have been wielding a pen, is really impressing a branding iron on the shoulder of a prisoner and branding him as



FIG. 106.—RAMSES III HUNTING WILD BULLS

This scene is one of the masterpieces of Egyptian artistic composition. It is full of life and vigor. The huge wild cattle charging into the reed swamps by the river are magnificent creations. In handling his subject the artist has achieved a depth rarely seen in Egyptian reliefs, though it is doubtful whether in this instance it is the result of conscious effort. The fine swing of the marching men in the lower register adds greatly to the movement of the piece.

the property of the crown—an action which we find mentioned in the great Papyrus Harris of Ramses III's reign. A list of observations like these, indefinitely long, might be made to fill a large part of this survey volume.

Of greater importance are the artistic revelations. Close observation of the work of the sculptor's chisel and the painter's brush on

these walls has disclosed quite clearly the fact that over the routine artists, who worked day after day with little power or imagination, there stood a great master who controlled the spirit and character of all the scenes on the temple walls. Sometimes the dull and unimaginative work of the routine artists had already been cut into the stone; but when the master discovered its lack of life and movement he had no hesitation in ordering this work to be filled with plaster. On the new surface thus produced he had many figures cut over again with greater power and vigor (Figs. 102-3). We are fairly entitled to conclude that the recutting was done on lines which he laid on the wall with his own hand.

An expanse of wall several hundred feet long, peopled with gigantic figures of the Pharaoh towering in heroic stature far above his pygmy enemies in one battle scene after another, is, as a whole, the product of a splendid imperial imagination. When bright with the original colors it must have created an overwhelming impression of the supreme personality of the Pharaoh. Nowhere else in the ancient world have such vast works of art survived as are found on Egyptian temple walls; but at the present day the effect is marred and the impressiveness greatly disturbed, if not almost wholly destroyed, by the ruinous condition of the walls, with their huge checker of masonry joints and the blemishes with which time and weather have marred the surface. The Oriental Institute is for the first time disengaging from the masonry walls the great painted sculptures of Medinet Habu (Figs. 104-5). Much of the old beauty, now lost on the original walls, is restored in the published plates. It is now clear that Ramessid art was not in full decadence, but still possessed great power and vigor and especially movement (Fig. 106). The power of line with which the Ramessid artists worked is a revelation to be found for the first time in the folios of the Institute publication. The impressiveness of the entire temple wall as a coherent whole is of course only *suggested* by the individual plates, and can never be wholly recovered in modern times.

CHAPTER X

EGYPTIAN PAINTING AND THE ABYDOS EXPEDITION

EGYPTIAN PAINTING

The modern traveler at Luxor, while still standing on the terrace of the Winter Palace Hotel, may discover with the naked eye and much more clearly with his binoculars long lines of open tomb doors in the face of the western cliffs. On crossing the western plain of Thebes he beholds an ancient cemetery gradually expanding before him and occupying 2 miles of these magnificent cliffs (Fig. 107). The openings of its so-called "tombs" (Fig. 108), of which well over three hundred have been catalogued, give access to chambers and halls which cannot properly be designated as tombs. In reality they served as mortuary chapels where the relatives of the deceased might offer food and drink for the dead and maintain the mortuary ritual, which must have continued for many years after the burial of the owner. The actual tomb chamber lay at the foot of a shaft far below the tomb chapel.

It will be seen that these chapels were in function identical with the great mortuary temples of Ramses III and his imperial ancestors of the Eighteenth and Nineteenth Dynasties. The inner walls of the tomb chapels are adorned with beautiful paintings (e.g., Plate I, frontispiece), some of which are at the same time relief sculptures wrought first with the chisel and then adorned by the painter. In content these wall scenes depict a wide range of the life of the ancient Egyptian nobles and aristocrats (Fig. 109), especially during the period of the Egyptian Empire (about 1580-1150 B.C.). Those who are well acquainted with Sir J. Gardner Wilkinson's three volumes of *Manners and Customs of the Ancient Egyptians* will recall that this treasury of ancient Egyptian life was largely gleaned from the Theban tomb chapels.



FIG. 107.—GENERAL VIEW OF CLIFF TOMBS IN THE CEMETERY OF ANCIENT THEBES (OPPOSITE MODERN LUXOR)

There is not space in this survey to recount the efforts that have been made by modern Egyptologists to save the paintings in these Theban tomb chapels. When Champollion began work there in



FIG. 108.—TYPICAL ENTRANCE OF A CLIFF TOMB IN THE THEBAN CEMETERY
The tomb of the vizier Ramose as first seen by the writer in 1895

1829 he found the chapels largely occupied by living Egyptians as their homes. Such daily use by the modern population resulted, of course, in irreparable damage and destruction of the wall decorations. What still remains of Egyptian life, religion, and art to be salvaged by us is but the scanty wreckage of what once existed.

Among those who have devotedly labored to save the paintings



By the kindness of the Metropolitan Museum of Art, New York

FIG. 109.—INTERIOR OF A THEBAN TOMB CHAPEL WITH WALL PAINTINGS

One side of the entrance is seen at left. The owner, whose name was Nakht, was a priestly official of the god Amon and lived at Thebes in the fifteenth century B.C. He and his wife are portrayed most clearly in the large figures on the left wall.

and records still surviving in these Theban tomb chapels none have rendered greater service than Mr. and Mrs. N. de Garis Davies. For many years Dr. Alan H. Gardiner shared the financial responsibility for the maintenance of the work of Mrs. Davies, with the result that, as the years passed, Mrs. Davies was able to turn over to him a series of copies of these paintings which gradually grew into a stately and important collection. Through the generosity of Mr. John D. Rockefeller, Jr., the Oriental Institute is now in position to publish 115 or more of the most important of these paintings. They will be issued under the supervision and editorship of Dr. Gardiner, to whose generous interest the original collection of these materials is due. To this nucleus, in which the Egyptian Empire is so richly represented, Mrs. Davies has been adding during the past three winters (beginning with 1930/31) a series of copies which include some subjects outside of the Theban necropolis, so that the collection will contain examples from the Old and Middle Kingdoms as well.

Almost half of the color plates of the publication, including that from which our frontispiece is reproduced, have already been printed. When issued, the two folio volumes of this series of plates¹ will form a treasury of ancient Egyptian paintings such as has not heretofore been available.

THE ABYDOS EXPEDITION (IN ASSOCIATION WITH
THE EGYPT EXPLORATION SOCIETY)

It is to the tomb chapels of the Egyptians that we owe most of our knowledge of Egyptian life and civilization. The temple of Medinet Habu, as we have seen, is a mortuary chapel; the so-called tombs of the Theban necropolis, as we have just noticed, are really mortuary chapels; and the beautiful temple of Seti² I at Abydos, the sculptures and paintings of which are so much admired by modern travelers, is likewise a mortuary chapel. Without doubt we must admit the correctness of the common opinion that the sculptures of

¹ *Ancient Egyptian Paintings*, selected and copied by Nina de Garis Davies and edited by Alan H. Gardiner.

² The name is often used in its Greek form "Sethos."



FIG. 110.—A FAMOUS RELIEF TYPICAL OF THE WALL SCENES IN THE ABYDOS TEMPLE OF SETI I. THE KING PRESENTS AN IMAGE OF MAAT ("TRUTH") TO THE GODS

this temple are the most beautiful in Egypt (Fig. 110). Moreover, there are rooms and halls in the rear portion of the temple where the work of the painter, supplementing that of the sculptor (Plate II

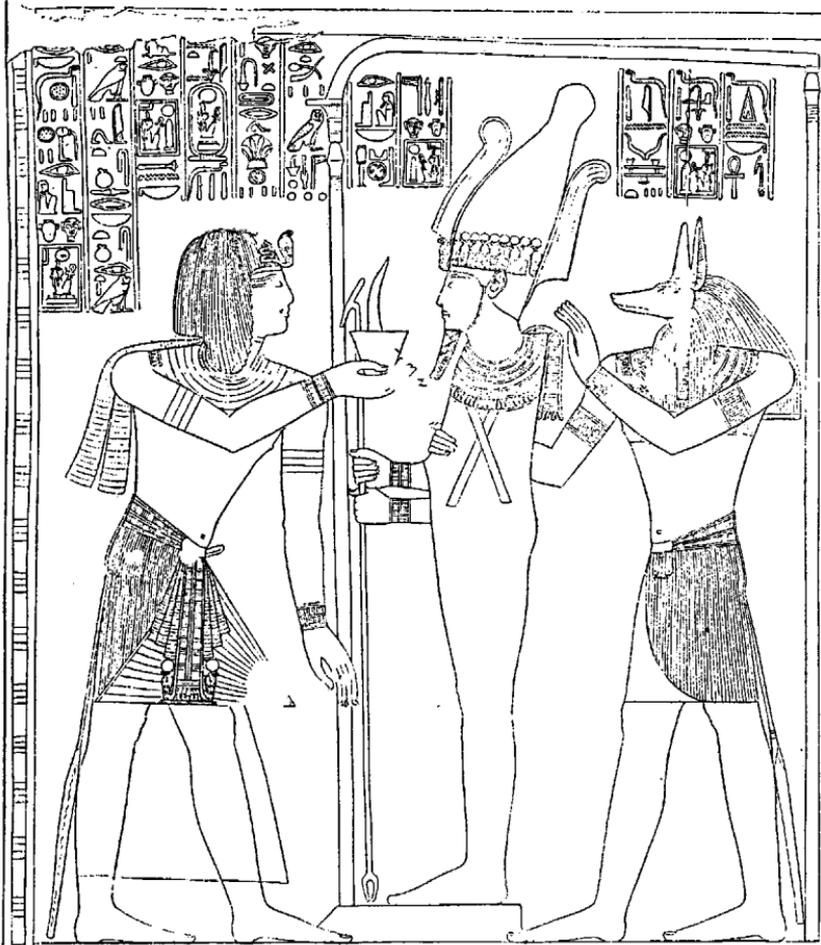


FIG. 111.—THE PAINTED SCULPTURE SHOWN IN PLATE II, AS RENDERED IN LINE DRAWING BY MISS CALVERLEY

PLATE II



From a color drawing by Amice M. Calverley

KING SETI I BURNING INCENSE TO OSIRIS AND UPWAWET. A RELIEF
SCENE IN THE ABYDOS TEMPLE OF SETI I

and Fig. 111), is more perfectly preserved than anywhere else in Egypt, especially since the wanton destruction of the painted walls of Philae, now buried for many months every year under the waters of the Nile. A number of insufficient publications of these Abydos wall sculptures have given us nothing more than line drawings, interspersed with a few photographs. No effort has ever been made to copy these superb relief scenes in color and to publish them in adequate color plates.

We have already referred to the invaluable services of the Egypt Exploration Society in its effort to copy and publish the wall sculptures and other records of ancient Egypt. Even under post-war financial conditions it was the laudable ambition of that British organization to produce an adequate publication of this temple of Seti I. Miss Amice M. Calverley, who was placed in charge of the project, had been at work for nearly two seasons for the Egypt Exploration Society when it became apparent that any program of salvaging ancient Egyptian painting would be incomplete without the painted sculptures of this Abydos temple. As a result of his visit at Abydos in February, 1929, Mr. John D. Rockefeller, Jr., eventually decided to include this work in his general plan for producing an adequate record of ancient Egyptian painting. The Abydos project therefore became an effort in which both the Egypt Exploration Society and the Oriental Institute are participating, and the folio volumes of the publication are to appear as a joint undertaking of the two organizations.

It is difficult to say too much in praise of the magnificent work which Miss Calverley and her associate, Miss Myrtle F. Broome, are doing at Abydos. No better draftsmanship has ever been available in the service of archeology (cf. Fig. 112), and in examining plates of the coming publication the writer has been so impressed with the fidelity and the beauty of the drawing that he feels the question may be fairly raised whether any drawing as good as this has ever before been done in Egypt.

In so far as the preservation of color on the walls makes it desirable, the plates in this publication also will include *in color* a record of the work of the painter. In size these plates will be of the same format as the folios of the Medinet Habu publication. At least

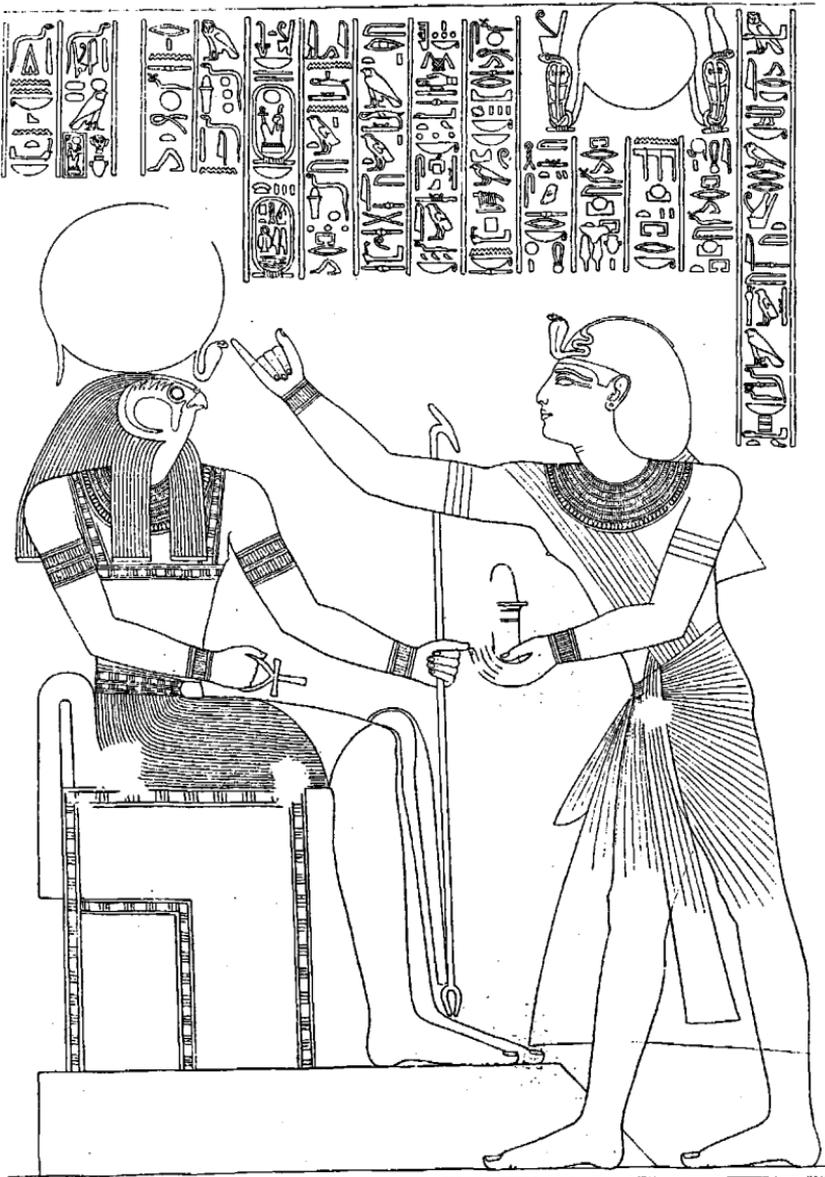


FIG. 112.—KING SETI I ANOINTING A STATUE OF THE SUN-GOD RE-HARAKHTE
Miss Calverley's line drawing of a relief in the Abydos temple of Seti I

eight folio volumes of that size will be required,³ besides a series in smaller format containing the descriptive text. Miss Calverley has now been at work for five years on the Abydos temple, and the task has proved far longer and far more exacting and difficult than anyone had foreseen. It is greatly to be hoped that she may be able to carry the project to a successful conclusion. The temple lies on the margin of the western desert, some 7 miles back from the Nile, in a community usually regarded as turbulent and not wholly safe. The courage and self-sacrifice which the young women of this expedition have shown are beyond all praise. They are to be congratulated on what they have accomplished, and they should receive every encouragement to continue until the task of salvaging the superb works of art in the temple of Seti I at Abydos is complete.

³ The first of these, now in press, is entitled: *The Temple of King Sethos I at Abydos*, copied by Amice M. Calverley, with the assistance of Myrtle F. Broome, and edited by Alan H. Gardiner. Vol. I. *The Chapels of Osiris, Isis, and Horus* (London and Chicago, 1933).

CHAPTER XI

THE MEGIDDO (ARMAGEDDON) EXPEDITION

Organization for the complete excavation of an ancient city mound in Palestine marked the beginning of the Oriental Institute's permanent operations in Western Asia (cf. pp. 74-89). Archeological excavation has been going on in Western Asia for about a century, but such work began in Palestine less than two generations ago. Even now it cannot be said that a single *extensive* site containing the remains of an ancient capital city which could be considered large for its time has ever been exhaustively excavated and recorded stratum by stratum. In the beginning sentimental interest attracted biblical scholars to investigate Jerusalem; but the Holy City is essentially a creation of the Crusaders, and it was early perceived that it could throw very little light on Hebrew history in the pre-Christian period. It was evident that, in order to gain any great body of fact regarding the history of the town civilization of Palestine before and during the Hebrew occupation, it would be necessary to attack a site of some size identified if possible with some ancient and well known name. The sites of this general character most extensively investigated heretofore are Gezer, Beisan, and Samaria; but even they were abandoned without the completion of the investigation. For this and other reasons already stated on pages 74-75 the Institute decided to undertake the complete excavation of the mound now called by the modern natives Tell el-Mutesellim, which has been conclusively identified with ancient Megiddo, the "Armageddon"¹ of the Book of Revelation.

The dominant geographic features of Palestine are ranged in north and south lines. Most prominent among them is the great rift of the Jordan Valley and the Dead Sea. Parallel with that rift

¹ "Armageddon" means in Hebrew the "Mount of Megiddo." "Mageddon" is a Greek corruption of the Hebrew "Megiddo," and the syllable *ar* is the Hebrew *har*, meaning "mount," which has lost its initial aspirate.

THE MEGIDDO (ARMAGEDDON) EXPEDITION 235

on its west the central ridge which forms the backbone of Palestine extends likewise from north to south. The Lebanons, in so far as they extend into Palestine, are also north and south ranges. Back of the bold headland of Mount Carmel, however, there is an obliquely transverse range of hills commonly called the Carmel Ridge. It lies like a bulwark blocking the north and south roads which connect Western Asia and Egypt. Megiddo is situated on the northern slopes of this ridge, somewhat over 20 miles inland from the modern town of Haifa (Fig. 113).

The command of the most usable pass leading through the Carmel barrier has from the beginning of history been of substantial value for both commercial and military reasons. An Egyptian army holding the pass through the Carmel Ridge might stop an invasion coming from Asia, and an Asiatic army on the north side of the same pass might likewise halt an invasion of Asia by the pharaohs. The earliest such collision of which we hear in history followed the invasion of Asia by Thutmose III early in the fifteenth century B.C., when he boldly marched through the pass and attacked the Asiatics in their fortress city of Megiddo (Fig. 114). This had been established at the north end of the pass for the purpose of maintaining complete command of it and of preventing just such an invasion. From that time to this Megiddo has witnessed one battle after another between the armies of Asia and Africa, or again between those of Western Asia alone, as one conqueror after another has endeavored to gain possession of this key position. Indeed, its strategic value made the battlefield upon which Megiddo looks down proverbial throughout the ancient oriental world, until in the Book of Revelation Armageddon figures as the last great scene of human struggle.

Furthermore, the plain to which the city of Megiddo gave its name, lying between the Carmel Ridge on the south and the hills of Galilee on the north, offered the most spacious opportunity for agricultural development in all the length and breadth of Palestine west of Jordan. Long before the occupation of Palestine by the Hebrews there had grown up at this point a Canaanitish kingdom depending for its prosperity upon agriculture in the plain and upon commerce along the important highways which traversed the re-

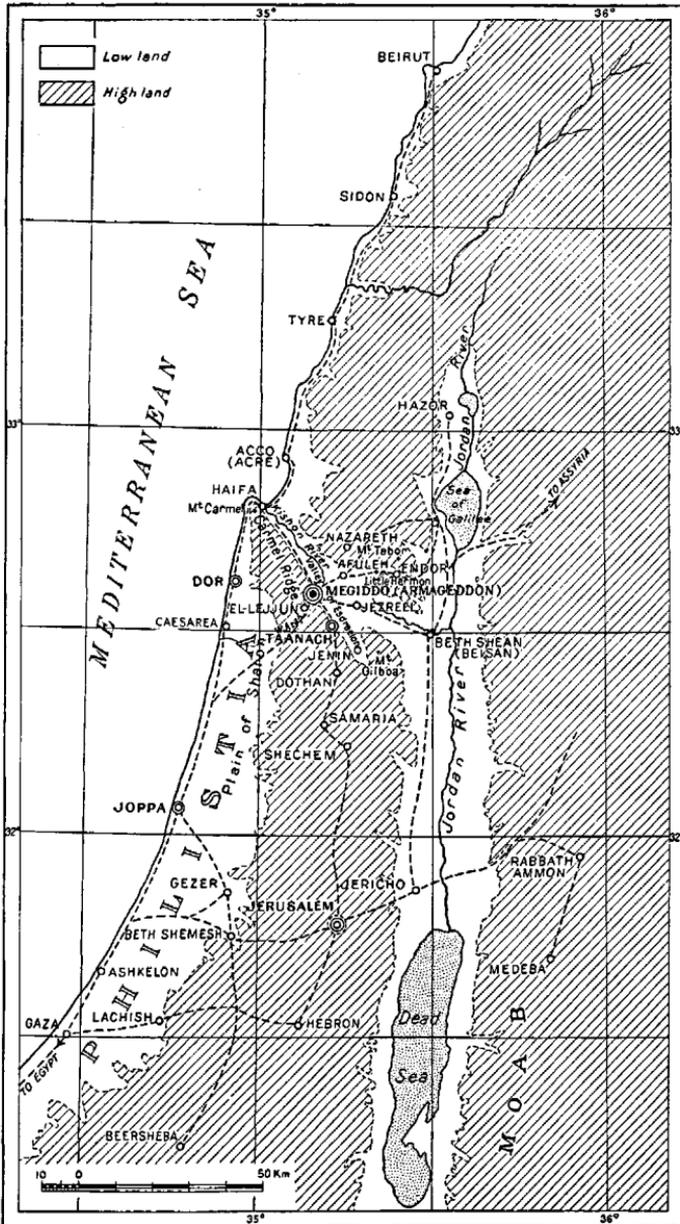


FIG. 113.—MAP OF PALESTINE, SHOWING THE RELATIONSHIP OF MEGIDDO TO THE TRADE ROUTES



FIG. 114.—THE PASS (WADI ARAH) THROUGH THE CARMEL RIDGE GUARDED AND COMMANDED BY MEGIDDO, ACROSS THE RUINS OF WHICH WE ARE LOOKING

gion and connected Egypt with the lands of the Tigris and the Euphrates. At the present day the great mound, as seen from the plain below (see Fig. 30), has lost none of its frowning impressiveness as a place of power commanding the pass behind it and ruling the peasant population of the plain that stretches below it to the hills of Galilee on the north.

In the years 1903-5 the Deutsche Orient-Gesellschaft commissioned G. Schumacher, an architect of Haifa, to investigate the mound of Megiddo. He drove a trench across the mound from north to south, with here and there a lateral extension. His method was not one which could be expected to disclose the evidence still preserved in the mound; including even soundings which Schumacher made at various other points, his work did not carry very far the investigation of the mound as a whole.²

Following the gift of Mr. Rockefeller, Jr., to the Oriental Institute in June, 1925 (see p. 75), the staff of its new Megiddo Expedition under Dr. Clarence S. Fisher was already on the ground by autumn of the same year. Obligated to live in tents until their expedition house (Fig. 115) could be erected and made habitable, the members of the staff were exposed to malarial mosquitoes, and before the end of the summer they were all more or less helpless from periodic attacks of malarial fever. Indeed, Dr. Fisher, who had formerly suffered seriously from malaria as a result of his long sojourn in Babylonia, was after two seasons obliged to give up his post. He was succeeded by Mr. P. L. O. Guy, then acting director of the Department of Antiquities in the Palestine government.³

² See Deutscher Verein zur Erforschung Palästinas, *Tell el-Mutesellim*. I. *Fundbericht* (A. Text; B. Tafeln), erstattet von G. Schumacher (Leipzig, 1908); II. *Die Funde*, bearbeitet von Carl Watzinger (Leipzig, 1929).

³ Early members of the Megiddo Expedition staff included besides Dr. Fisher and the persons named below his nephew, Clarence S. Fisher, Jr., and John P. Kellogg. Since May, 1927, the staff has consisted of the following members:

Edward L. DeLoach, surveyor, September, 1925—March 10, 1930
 William Effendi Gad, assistant surveyor, September, 1925—May 13, 1927
 Labib Effendi Sorial, assistant surveyor, September, 1925—May 13, 1927
 O. E. Lind, photographer, August, 1926—
 Miss Ruby Woodley, recorder, August 31, 1926—August 13, 1928

[Footnote continued on page 240]



FIG. 115.—THE EXPEDITION HOUSE AT MEGIDDO, SEEN FROM THE NORTHEAST, WITH THE MOUND IN THE BACKGROUND

The problem of making the Megiddo mound a healthful place at which to live and work was a long and slow task (see pp. 75 and 77).

It will not be possible in a brief survey such as this to recount the progress of the investigation of the Megiddo mound stage by stage. Some of its more important aspects and results may, however, be mentioned.⁴ It has already been stated, in discussing the Institute's excavation of Medinet Habu, that the objective of modern archeological excavation is not the discovery of museum pieces but rather an exhaustive salvaging of the available evidence, no matter what its character may be. Considered qualitatively, very little of such evidence is suitable for museum installation or for sensational publication in the modern daily press. The important thing is the body of data which may be won from the evidence. But such data and the original materials from which they are drawn are of little value unless full and exhaustive field records are carefully kept.

The processes of salvaging evidence and the methods of keeping field records have been matters of gradual growth and development since the time in the early seventies of the last century when Schliemann made his haphazard clearances in the mound of Troy

Hassan Effendi Hassan, draftsman, April, 1927—October 5, 1927

Clarence S. Fisher, advisory director, May 1, 1927—June 30, 1929

P. L. O. Guy, field director, May 1, 1927—

R. B. Parker, superintendent, June 23, 1927—

G. M. Shipton, draftsman, March 1, 1928—

Charles Little, draftsman, April 17, 1928—July 31, 1928

E. Wilensky, surveyor, April 23, 1928—June 5, 1928; archeological assistant, April 1, 1931—

J. Terentieff, surveyor, June 3, 1928—September 28, 1928

R. S. Lamon, surveyor, September 26, 1928—

W. E. Staples, epigrapher and recorder, September 26, 1928—July 31, 1931

Charles Kent, draftsman, March 1, 1929—June 30, 1929

R. W. Hamilton, volunteer, June 24, 1929—July 10, 1929

L. C. Woolman, architect, September 17, 1929—August 30, 1930

R. M. Engberg, topographic assistant, October 1, 1930—

Herbert G. May, epigrapher, July 1, 1931—

⁴ For additional information see the preliminary reports of Dr. Fisher and Mr. Guy, "Oriental Institute Communications," No. 4 and No. 9 respectively.

THE MEGIDDO (ARMAGEDDON) EXPEDITION 241

without any method and often without any records at all. The first use of adequate field records in modern excavation was made by the German expedition at Olympia at about the same time that Schliemann was excavating at Troy. The improvements in such records since then have been many. They have been nowhere more fully developed than at the excavation of Megiddo, where Mr. Guy has introduced valuable improvements and refinements. The processes and methods employed there may therefore be briefly described in this report.

In investigating a city site such as Megiddo it is of essential value to establish a level accurately related to sea-level. In 1925 a line was run from the Mediterranean at Haifa, based on the mean sea-level at that point, to a bench mark of solid concrete in the north-west sector of the mound. The reading for this level was 122.661 meters above the Mediterranean. From this bench mark as a base it was easy to establish other levels on the site.

The next step was the completion of a carefully surveyed grid of 25-meter squares⁵ covering the entire mound and its surrounding slopes as a basis for recording every ancient piece of evidence found in the mound. This survey was made on a scale of 1:1000, with 2-meter contour intervals. The squares are designated in terms of letters and numbers, as shown in Figure 116. Their corners are marked with pegs, and at Megiddo the designation of each square is marked on the peg at its northwest corner. Thus the find-spot of a given antiquity may be designated by a letter and a number. That is, "K 15" is the square where the "K" range is intersected by the "15" range.

These squares were further mapped on a larger scale of 1:200, and a new and theoretically complete series of "square-maps" on this scale was made for each stratum of the mound. Each block of sixteen squares was mapped on a separate sheet. For a given stratum, therefore, there were a good many such sheets. A transparency was made for each of these 1:200 plans. By placing such a transparency over the corresponding sheet of the stratum immedi-

⁵ At Medinet Habu, however, we have employed a system of 20-meter squares, and in Anatolia 10-meter "plots" have been used.

ately above or below, the archeologist can correlate as many as three different strata. The use of balloon mosaic photographs (see p. 249) also aids substantially in such correlating.



FIG. 116.—SURVEY OF THE MOUND OF MEGIDDO, WITH SQUARES OF GRID LETTERED AND NUMBERED

It will be seen that the term "Square K 15" is not a *complete* designation of the find-spot of an antiquity, for it indicates only

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the *horizontal* position. It is of fundamental importance to know also the *vertical* position, that is, the stratum in which the piece was discovered. The strata, therefore, beginning at the top, were numbered with Roman numerals. The problem of disengaging and determining the upper and lower limits of the strata is probably the most difficult in the whole range of the archeologist's field work. For the strata are not necessarily horizontal like the layers in a birthday cake. If the site was undulating when the city was built, the ruins of any given period will likewise undulate; and the undulation continues through the accumulation of centuries, though valleys tend to be filled up. Even on a level site taller buildings with thick and massive walls will produce a greater bulk of rubbish than lower and less massively built structures. For this reason a stratum may not be of uniform thickness. There is therefore much interpenetration of one stratum into another, and a well preserved building of considerable massiveness may rise through several strata superimposed above the one to which the building belongs.

The complication of stratum determination may often be avoided, or at least for a time postponed, as a result of the fact that evidence—sometimes plentiful evidence—is frequently found in a tomb, building, or single room. In such a case the containing structure is at once given a "locus" number by which evidence found in such a locus may be more quickly identified.

When the survey map is complete in every detail, and when the corner pegs have been driven in on the actual surface of the mound, the place is ready for scientific investigation.

One of the important problems in such an excavation is the selection of a "dump" site where rubbish and débris from the excavations can be deposited without covering valuable ancient remains. At Megiddo the eastern slope of the mound was selected for the dump (Fig. 117). Here an extensive space (*E* in Fig. 116) was carefully excavated, following the above described methods, before any material was dumped upon it. This clearance resulted in the discovery of a large number of ancient tombs such as seem to have occupied the slopes of the mound very extensively. All told, these tombs furnished a large body of valuable evidence. Some of it

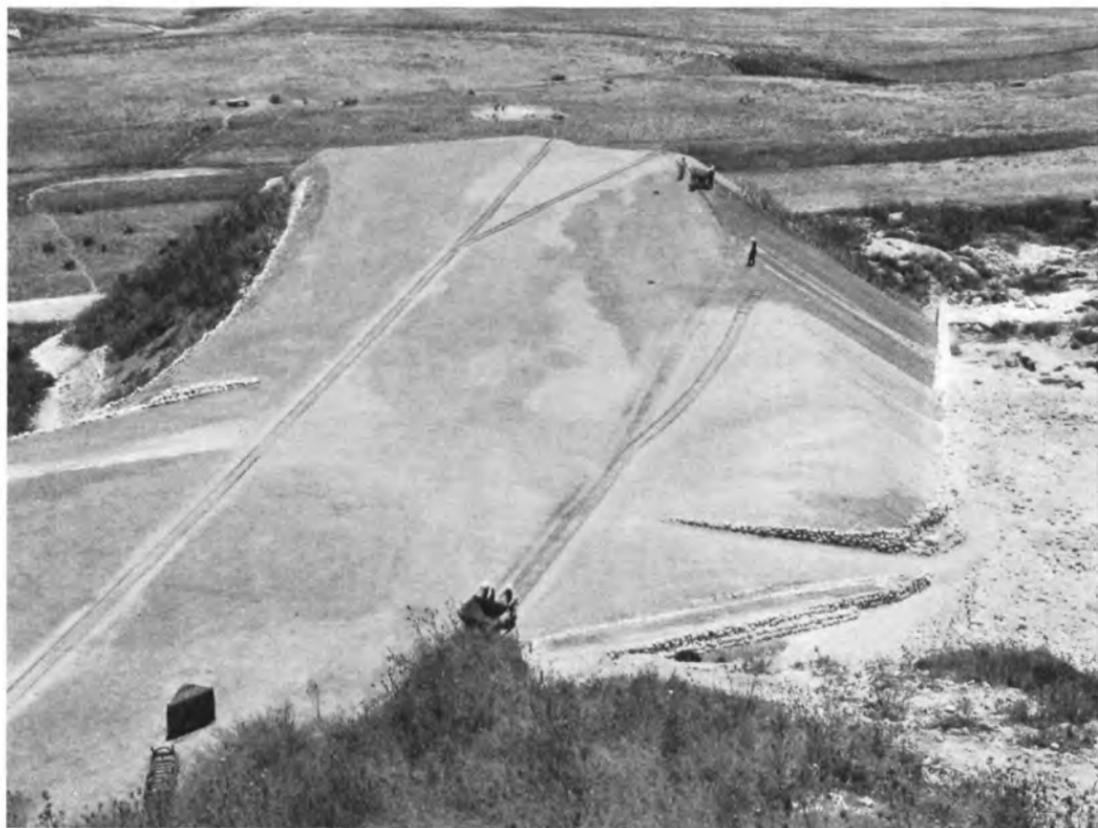


FIG. 117.—THE DUMP AT MEGIDDO, SEEN FROM ABOVE THE CHUTES IN JULY, 1929

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reaches back to the Stone Age, thousands of years before the Hebrews settled in Palestine.

Preparatory to the excavations, a Décauville railway with convenient dump-cars was installed. It was found that the natives of the neighboring villages were eager to earn cash wages, and, except in time of harvest, it was usually easy to obtain local labor. But archeological excavations cannot be carried on by inexperienced natives without close, often individual, supervision. Fortunately the development of archeological excavation in Egypt has been such that Egyptian natives of long experience in such work can be secured to serve as foremen and overseers of the gangs of Palestinian workmen. The use of these Egyptian foremen involved the Institute in a good many wearisome formalities in order to comply with governmental regulations controlling the importation of labor into Palestine; but all such arrangements have now become stereotyped, and these Egyptian foremen migrate each season from Egypt to Palestine and return without much difficulty.

When a foreman has been set to work with his gang in a given area, the rubbish to be cleared away is carried in baskets to the dump-cars of the little railway. These cars are then pushed rapidly over to the central turntable, which shifts them to the shortest line leading to the chutes (Fig. 118) on the east slope where the rubbish is shot down to the dump.

As soon as the clearance discloses evidence which should be recorded, the process of marking this evidence for future identification must begin. Every piece is immediately marked with the designation of its square, or with its locus number if it has one. Owing to the difficulties mentioned above, on page 243, it is often necessary to postpone marking a given piece with the indication of its stratum. In fact, this is never added at once unless the stratum is a matter of absolute certainty. If the evidence in question is pottery, the number can be placed directly on the pot or potsherd; if it is an object not so easily marked, such as a bronze dagger blade, a tag may be used. The workers have been trained not to move evidence which is plentiful and important until a careful photographic record has been made. From the beginning to the end pho-



FIG. 118.—THE CHUTES AT MEGIDDO

On the right is a disused wooden chute; next to it, a steel chute which discharges into dump-cars; at extreme left, a chute for stones.

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tography plays a very important part in the field work of the archeologist, especially in the final form in which the evidence is filed.

As soon as the antiquities have been marked they are placed in baskets and carefully carried to the expedition magazines, where the process of registering and recording is continued stage by stage until the record of the evidence is in a form which will permit it to be published. After registration under a serial number has been completed, a fuller record must be made.

Pottery always constitutes the larger part of the evidence found by excavation. At Megiddo the "pottery catalogue" is therefore kept on its own special form of card (Fig. 119), and the letter *P* is prefixed to the number given to each pot. Any other antiquity, such as a bronze dagger, is termed an "object." For the "object catalogue" another kind of card is used; the letter *M* is prefixed to the number of each object (see Fig. 120). All the catalogue cards are quadrille-ruled in blue ink, which may be eliminated during the process of reproduction, so that drawings made on these cards may be transferred directly to the plates prepared for publication.

The card records are made in duplicate by the use of carbon paper. One set is filed behind a guide card bearing the locus number. On such a guide *all* the evidence found in the same locus is recorded by number etc. If a card is for any reason removed, therefore, the lack of it can be controlled by consulting the guide card. The cards of the duplicate set are distributed by types and categories, so that all pottery of the type called "bowls" is filed together, and all daggers found throughout the mound are likewise filed together. Thus the user of this file can determine at once what bowls or what daggers have come out of the mound. All evidence of importance is photographed to scale in the studio, and the photographs also are filed. The complete files thus form not only an exhaustive catalogue but also an easily accessible record of every piece of original evidence found throughout the course of the excavation, whether the inquirer wants to know what was found in a given locus, or where a given object was found, or what similar objects have been discovered in the mound.

MEGIDDO 10 APR. 1932 P 4356

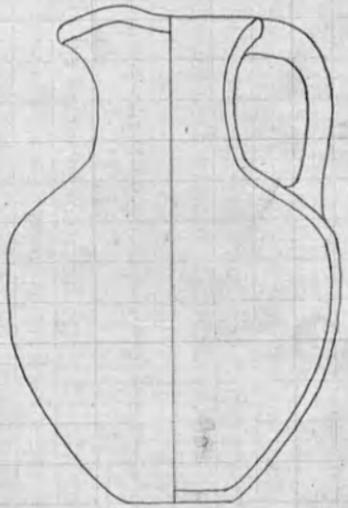
SQUARE	STRATUM	LOCUS	TYPE
W 16	ES	T 1100-B	JUG

PHOTO A 947 STATE INTACT D 0.210 H 0.309 M

MEDIUM WARE MEDIUM GRITS FAIRLY WEL MADE

MODERATELY FIRED SURFACE BISTRE 3

CORE PERMANENT BROWN 2 FINISH WET SMOOTHED



DRAWN *Gr*

NOTED *M*

CHECKED *Gr*

FIG. 119.—POTTERY CATALOGUE CARD

MEGIDDO 12 APR. 1932 M 3491

SQUARE	STRATUM	LOCUS	CATED
W 16	ES	T 1100-B	DAGGER BLADE

PHOTO A 94 STATE FRAGMENTARY

MEASUREMENTS 0.262 x 0.055 x 0.003 M. MATERIAL BRONZE

COLOR NORMAL DESCRIPTION GREATLY OXIDIZED;
NOT RIBBED; THREE RIVETS FOR ATTACHMENT
TO HANDLE.



DRAWN *S*

NOTED *M*

CHECKED *Gr*

FIG. 120.—OBJECT CATALOGUE CARD

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As at first undertaken, the clearance at Megiddo included only an area of some 8,000 square meters in the northeast sector of the mound, east of Schumacher's trench; but after the field directorship had been taken over by Mr. Guy in the spring of 1927, it eventually proved possible to secure control of the entire mound. This extension involved Mr. Guy in the task of removing Schumacher's dump, containing some 9,000 cubic meters of rubbish. After the removal of surface soil over an area of some 29,000 square meters, ruins of ancient structures were visible all over the mound.

With the extension of the clearance to include the whole area on the top of the mound, there was visible for the first time in the history of such research the general plan of an ancient Palestinian city, although much of the newly cleared area was of later date than the area previously cleared. As the work progressed, it would have been very convenient if the expedition had possessed an airplane for photographing from the air the entire area disclosed (Fig. 121). Lacking such a costly convenience, Mr. Guy ingeniously devised substitutes: a tall ladder and, much more effective, a meteorological balloon. This balloon is large enough to carry a camera but not an operator. The camera is held in position by three-point suspension, the two wires used for the anchorage of the balloon itself being wound on two small windlasses as shown in Figure 122. The height of the balloon can be read and regulated as shown on the wire when the moment for exposing the plate arrives. The camera shutter is electrically controlled, so that the pushing of a button on the ground operates the camera some hundreds of feet above. This method, as practiced by Mr. Guy, has resulted in very useful photographs of small areas of the mound (Fig. 123). By taking a large number of such photographs, it has been possible to put together a mosaic representing the entire mound (Fig. 124). As we have already mentioned (p. 242), such a mosaic, or detailed pieces belonging to it, can be exceedingly valuable in enabling the archeologist to complete his plans of a given stratum and to correlate one stratum with others above or below.

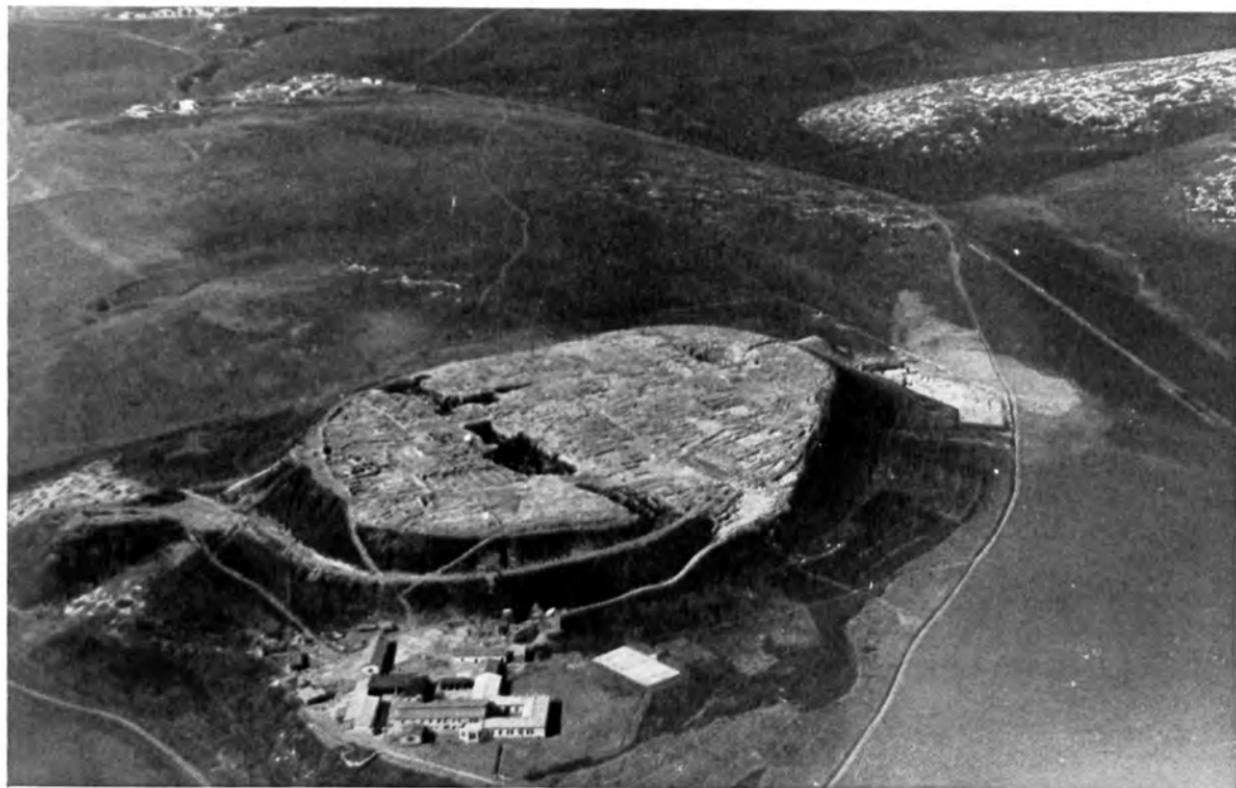


FIG. 121.—AIR VIEW OF MEGIDDO, TAKEN BY CHARLES BREASTED IN FEBRUARY, 1932

THE MEGIDDO (ARMAGEDDON) EXPEDITION 251

The extension of the cleared area resulted in a great increase in the volume of rubbish deposited on the dump. The available dump area was rapidly exhausted, and in 1931 Mr. Guy was obliged to clear on the eastern slope alongside the old dump a large additional area comprising about six squares (3,750 square meters). As above stated, Dr. Fisher's clearance on this eastern slope of the city mound had disclosed a series of tombs but apparently no buildings. In the *new* area Mr. Guy discovered tombs of a different type, which produced a great many objects, as many as four hundred per tomb. Such discoveries are a serious responsibility for the excavator. The recording staff is called upon to the full extent of its ability in producing accurate and conscientiously careful records of the finds. In the midst of these tombs certain disconnected small areas or "patches" had been actually inhabited, and remains of the houses were found. Each one of these "patches" contained a different series of strata, ranging from early Bronze to early Iron, and the problem of stratum and period was very much complicated. The shaft-tombs yielded a great quantity of fine pottery, including many decorated specimens. Among them was probably the finest vase yet found in Palestine, which will be memorable as the "Megiddo Vase." These tombs were likewise a veritable treasury of bronze weapons and utensils in excellent preservation. Among them was a group of fine daggers and a tripod for the burning of incense. Many bowls of bronze were found also. Of great importance for the racial problem in pre-Hebrew Palestine was the discovery of over fifty skulls so well preserved that it will be possible to measure them with great accuracy. They furnish an important basis for craniometric investigations because they were found in a deep hole in the rock, the content of which was presumably earlier than the earliest shaft-tombs, and were associated with very early types of pottery and with implements of flint.

The houses, of rough stone masonry and lumps of mud, are pre-vaillingly rectangular, but in several cases disclose also curved walls in combination with rectangular rooms. These houses are certainly among the oldest yet found in Palestine, if they are not indeed the very earliest. The materials from the tombs on the eastern slope

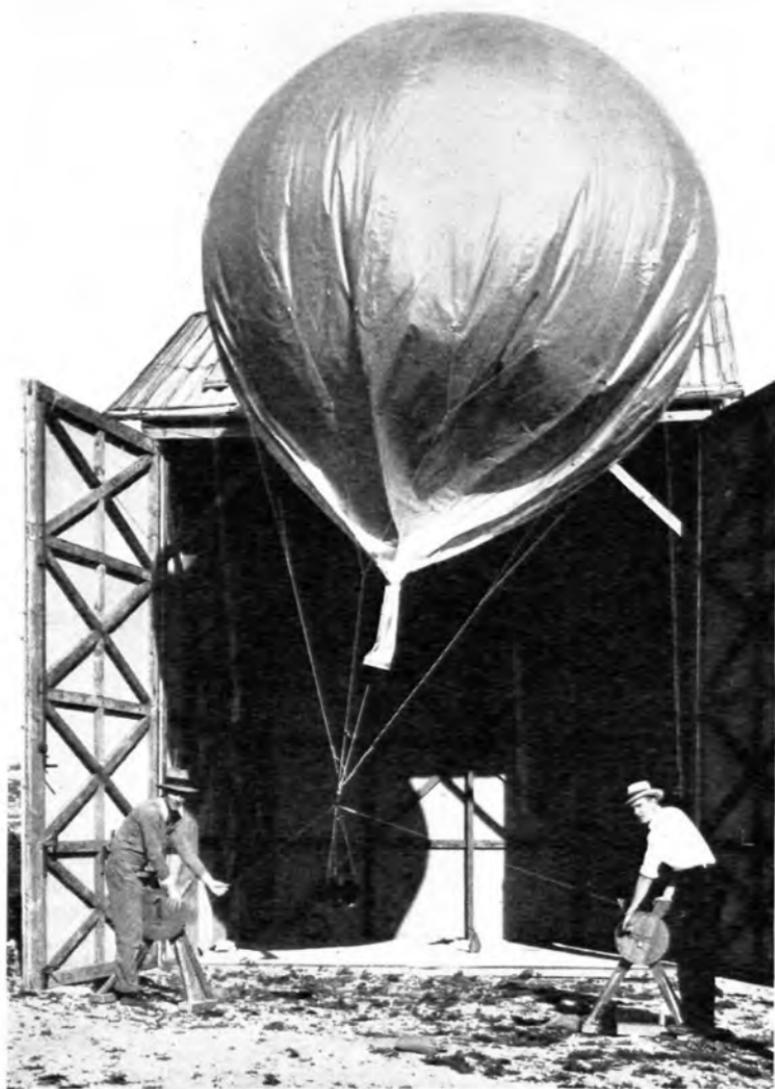


FIG. 122.—CAMERA BALLOON AND HANGAR



FIG. 123.—AIR VIEW OF A SECTION OF THE CITY OF MEGIDDO
The camera was carried by a balloon

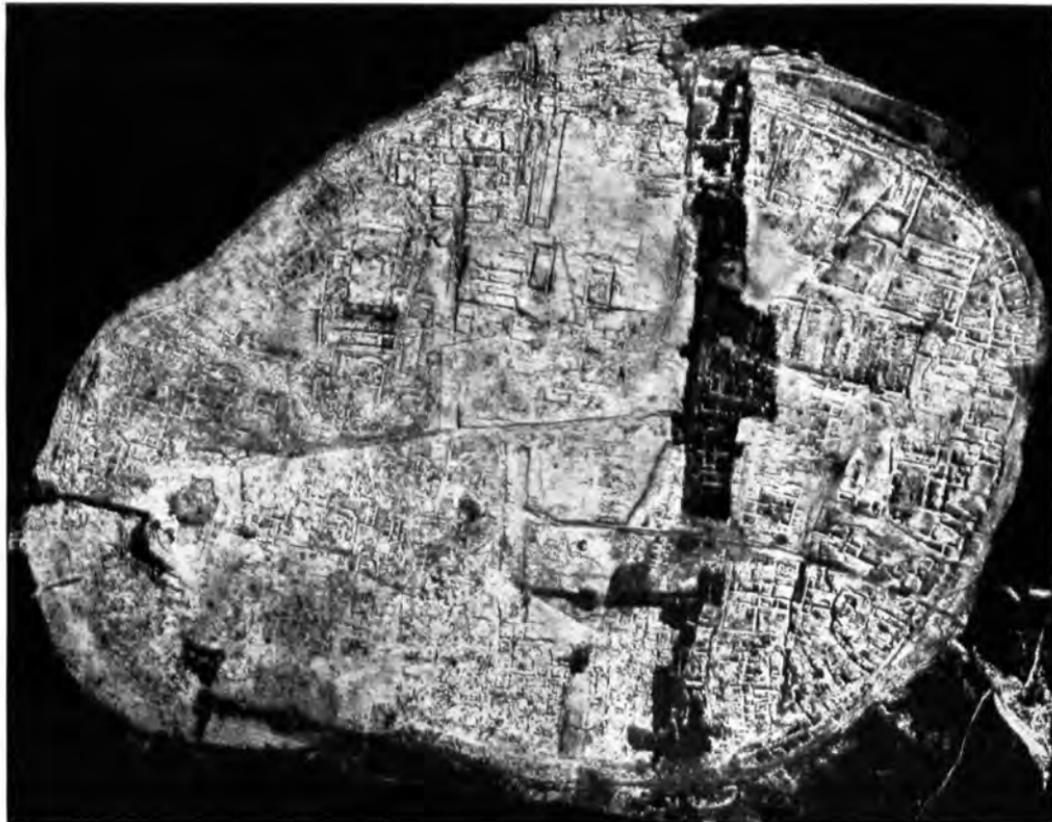


FIG. 124.—MOSAIC OF AIR VIEWS OF THE CITY OF MEGIDDO MADE BY PIECING TOGETHER VIEWS OF SMALLER AREAS (CF. FIG. 123)

THE MEGIDDO (ARMAGEDDON) EXPEDITION 255

of Megiddo, including pottery, Stone Age implements, copper, and bronze, besides the remains of human bodies, constitute one of the most important groups of evidence yet found in Palestine. Mr. Guy reports that the people who dwelt in these very early houses were long-headed and evidently possessed a culture of unexpectedly high development for a period when pottery was still executed by hand, long before the wheel was known in Palestine. Their pottery displays a surprising degree of skill; its pleasing forms are often decorated and burnished. Mr. Guy concludes that this earliest culture stratum at Megiddo must be regarded as Chalcolithic and would place it very early in the third millennium B.C., if not before.

Among the most interesting structures discovered were the city wall itself and a gate in the northwest sector, the position of which was discernible before any excavation had taken place. After the excavations had gradually revealed buildings of the early stages of the Hebrew monarchy, there came to light a series of stables (Figs. 125 and 126) capable of sheltering some three hundred horses. The character of these buildings, first identified by Mr. Guy, leaves little, if any, doubt that they are the stables of Solomon, mentioned in the Old Testament. In the vicinity of these stables several streets of the town were uncovered, and it has been possible to reconstruct one of the better houses of the time (Fig. 127).

In the far west corner of the city the excavators were surprised to find that the clearance of the surface soil over an area some 40 meters wide brought to light no traces of buildings. Mr. Guy therefore continued the excavation deeper, but still found no buildings. It was evident that there was a great hollow here. After going down to a considerable depth, the excavators discovered an extensive water system of the ancient city (Fig. 128). It penetrated the native rock to a depth of about 122 feet below the surface of the mound. As they went down, the excavators found themselves clearing a rectangular shaft, about 6.50×7 meters, containing a stairway which passed around the inside of the walls, with landings at the corners (Fig. 129). The upper part of this shaft was masonry and rested upon the native rock through which the lower part of



FIG. 125.—THE STABLES OF SOLOMON AT MEGIDDO



FIG. 126.—MODEL OF THE STABLES OF SOLOMON, MADE BY O. E. LIND FOLLOWING L. C. WOOLMAN'S RECONSTRUCTION

At right, a unit as found; next, a unit half restored; finally, two units completely restored. An additional unit at the right is omitted from the model.

the shaft had been cut, so that below the masonry both the staircase and the shaft were cut in bed rock.

At the foot of the shaft the stairway entered a steeply sloping tunnel which gave access to a horizontal tunnel all of which was cut in the rock for a length of nearly 165 feet (Fig. 130). This horizontal tunnel was about $6\frac{1}{2}$ feet wide at the bottom and nearly 10 feet high. Its clearance was a task of great difficulty. It was almost impossible to supply the men excavating in the face of the tunnel with sufficient air to enable them to carry on. When they had penetrated for some distance, the problem of light was also difficult; and, as the distance from the foot of the shaft increased, the transportation of the material to the surface of the earth at the head of the shaft became increasingly difficult. The baskets of earth were passed from man to man, and at its greatest length the chain of men numbered just over one hundred. Eventually the air became so foul that the lamps could hardly burn, and the men could, of course, work only in very short shifts. Mr. Guy finally succeeded in wiring the tunnel and carrying the connection to the power house at the expedition headquarters. The electric current thus made available not only furnished light but enabled Mr. Guy to instal fans. He finally also lowered a section of the Décauville railway, which greatly reduced the number of men needed for work in the tunnel.

The tunnel eventually passed into a large natural cave some 75 feet long and 23 feet high, at the far end of which was a spring which furnished the water supply. This cave opened on the slope of the hill outside the city wall. According to Mr. Guy's interpretation of the situation, the shaft and tunnel inside the city were involved in a later stage of the use of the spring. Originally it had been necessary for the women to go outside of the city wall and enter the cave in order to fill their water jars. This was of course a very unsafe arrangement in time of war or siege. The shaft which Mr. Guy had discovered first was therefore excavated and was connected with the cave and the spring by the long tunnel. The women of the city must have made the long and laborious descent of the winding stairway to the bottom of the deep shaft and then

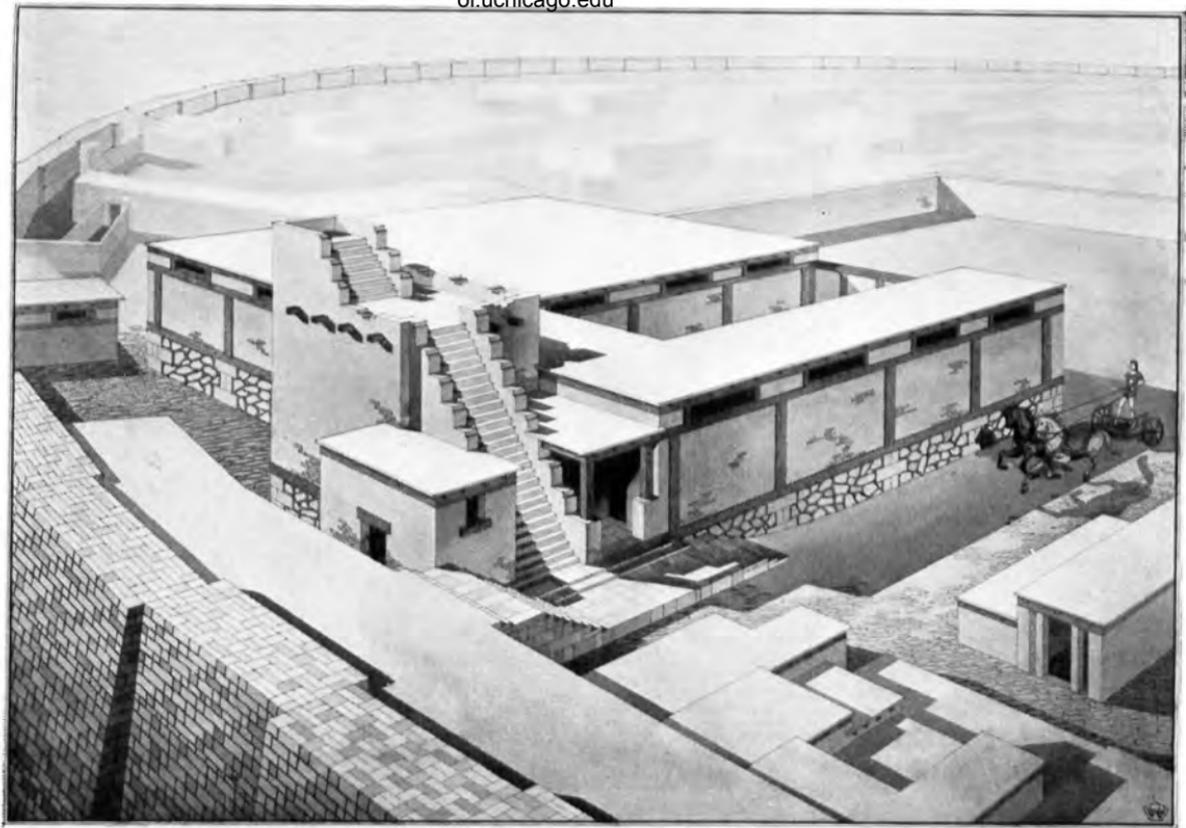


FIG. 127.—THE HOUSE OF A WELL-TO-DO RESIDENT OF MEGIDDO IN THE TIME OF SOLOMON OR SOMEWHAT LATER.
RECONSTRUCTION BY L. C. WOOLMAN



FIG. 128.—THE APPROACH TO THE TOP OF THE SHAFT OF THE MEGIDDO WATER SYSTEM

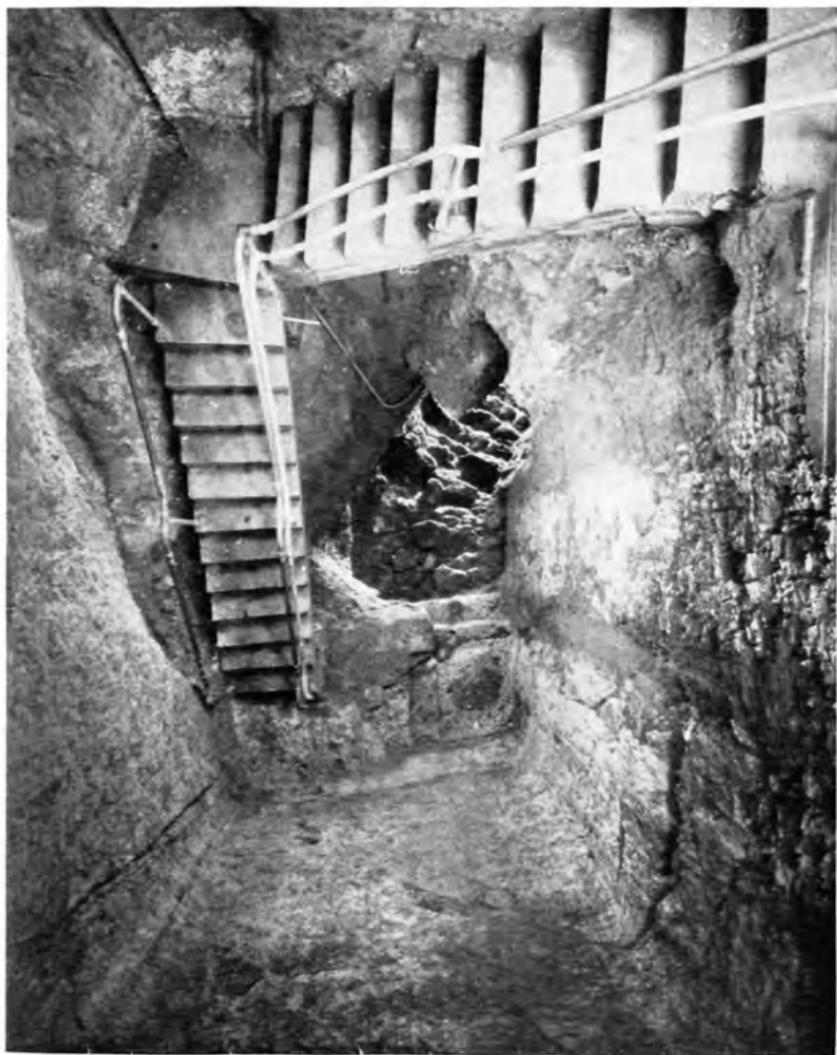


FIG. 129.—THE GREAT SHAFT OF THE MEGIDDO WATER SYSTEM, WITH STAIRWAY LEADING DOWN TO THE TUNNEL

The concrete upper portion of the stairway is a modern replacement



FIG. 130.—THE 165-FOOT TUNNEL OF THE MEGIDDO WATER SYSTEM
It leads from the shaft to the cavern and its spring

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traversed the length of the tunnel in order to reach the cave and the spring. To protect them in this situation it was of course necessary to close the entrance of the cave outside of the city wall, and this had been done with heavy masonry blocking. In a niche close beside this end of the complex Mr. Guy found the skeleton of a man in whom he would recognize a guard who had died at his post. The excavation disclosed the bronze handle of the guard's spear still lying by his side and a smoke-blackened spot where his lamp or torch had been attached to the wall. The production of this shaft and the connecting tunnel was a considerable piece of engineering for a community such as that of ancient Megiddo, and Mr. Guy conjectures that craftsmen from neighboring Phoenicia were summoned to carry out the work, as we remember was done by Solomon in erecting the first temple at Jerusalem. It is an interesting fact that, just as in the Siloam tunnel at Jerusalem, this tunnel was pushed through the rock by two gangs of men working from opposite ends at the same time. When they came together they did not meet exactly, and the jog left by this inexactness is still visible.

As the most extensive engineering project of its age yet found in Palestine, this water system will be of interest to all visitors in the future. Mr. Guy has therefore constructed a concrete roof over the head of the shaft and has likewise installed a concrete stairway in place of the old one and fitted it with a handrail (see Fig. 129). Electric lighting has been permanently installed, and the place can now be conveniently visited.

Beneath the stratum of the early Hebrew monarchy, which is the age of the ruins disclosed at least in the northern portion of the city around the stables of Solomon, there must lie another city of the so-called Canaanitish age which preceded the invasion of Palestine by the Hebrews. In this lower stratum, still to be excavated, it is expected that many remains of Canaanitish civilization will be found and that, in the end, we shall regain the entire architectural and town-planning arrangement of a Canaanitish capital of the period between 2000 and 1000 B.C. when the Hebrew monarchy began. For the last five hundred years of that period Palestine was

held by the Egyptian pharaohs, and the records which we now know that these Egyptian conquerors left in the Palestinian city must still be lying in the lower city beneath the stables of Solomon and the houses of his time. On the native rock itself, under these early Canaanitish civilizations, must lie prehistoric remains of human life even earlier than the town-building stage of culture in Palestine.

CHAPTER XII

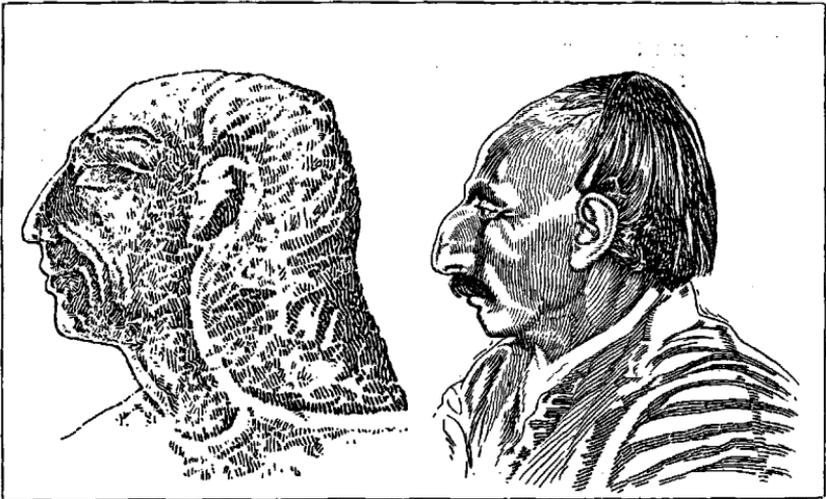
THE ANATOLIAN-HITTITE EXPEDITION

Little more than a generation ago our knowledge of the great group of peoples commonly designated as Hittites was confined to the Old Testament and was illustrated by a few incidents such as the story of David and his shameful treatment of Uriah the Hittite, one of his mercenary soldiers. The presence of this man in Palestine about 1000 B.C., among the mercenary troops of the Hebrew king, is in complete accord with the conclusion of physical anthropologists that the allegedly pure Hebrew population of ancient Palestine was without any doubt strongly tintured with Hittite blood. This is especially evident in the prominent aquiline nose, which is not a feature of the desert Semite, but entered Palestine through the so-called Hittite population of the western Highland Zone (Fig. 131).

Inland from Troy and the Aegean world,¹ stretching far across the hills and mountains of Asia Minor to Syria and the Euphrates, is an extensive region which may be called the "Hittite world," because the earliest inhabitants who founded a great nation there were Hittites. It comprised the west end of the Highland Zone in Asia (see map at end). Although the larger part of the Hittite world lay outside of the Aegean region, one end of it formed the eastern shore of the Aegean Sea. Asia Minor, the land of the Hittites, is a vast peninsula from 650 to 700 miles long and from 300 to 450 miles wide, being about as large as the state of Texas. The interior is a lofty table-land, the central area of which is little better than a desert. This central region is cut up into small districts by intervening mountains which have led to the isolation of these districts and the development of local cultures and without doubt have contributed to the survival of some very ancient stages of civilization. Around most of the central table-land rise mountain

¹ This paragraph is adapted from the writer's *Ancient Times* (Boston, 1916), p. 239.

ridges, tending to isolate it from the sea. On both sides of the mountain fringe are fertile valleys and plains producing plentiful crops. The seaward slopes of the mountains, especially along the Black Sea, are clad with flourishing forests. The northern coast of Asia Minor, east of the Halys River, rises into ridges containing



From the writer's "Ancient Times," by courtesy of Ginn and Company

FIG. 131.—AN ANCIENT HITTITE AND HIS MODERN ARMENIAN DESCENDANT

The head of the Hittite (at left) was carved by an Egyptian sculptor on a temple wall at Thebes, Egypt, over three thousand years ago. It strikingly resembles the profiles of the Armenians now living in the Hittite country, as shown in the modern portrait on the right. The strongly aquiline and prominent Hittite nose was also acquired by the neighboring Semites along the eastern end of the Mediterranean (the west end of the Fertile Crescent), including the Canaanites and the Hebrews.

rich deposits of metal ores, especially iron. The Hittites thus became the earliest distributors of iron when it began to displace bronze in the Mediterranean world and the Near East in the thirteenth century B.C.

For the earliest period, before the Indo-European invasions, it is convenient to call the inhabitants of the western end of the Highland Zone in Asia the "Early Anatolians." They were without

doubt inhabiting this region already in the Neolithic period (the Late Stone Age). These Anatolians tended to overflow at both ends of Asia Minor. At its western end some of them may have migrated to Crete and to the mainland of Greece as early as the Neolithic period itself. It was probably at this time that geographical names formed with *-assus* (e.g., "Parnassus") and other distinctive endings were carried from Asia Minor to Greece and even to Crete. At the eastern end of Asia Minor we recall the migration of the Hittites into Palestine (p. 265).

We know very little of the civilization or the history of the Early Anatolians, and it will require decades of persistent excavation among their earliest settlements before we shall be able to piece together an adequate account of their life and history. A Neolithic house, found at a depth of almost 85 feet within the Hittite city mound of Alishar (cf. Fig. 145) by the Oriental Institute expedition, gives us some hint of the life that went on just before the dawn of the Age of Metal. Probably as early as 2500 B.C.² the vanguard of Indo-European migration began to push in from the north and east, perhaps through the Caucasus Mountains. This was the first appearance of the Indo-Europeans in the arena of history. This invasion was the first of those vast movements of Indo-European population in Western Asia which brought the horsemen of Mitanni to the Euphrates a thousand years later and, after a second thousand years, resulted in the conquest of the Fertile Crescent and the whole Near East by the Indo-European Medes and Persians.

The Indo-Europeans introduced the horse into Asia Minor, as presumably they did along the Fertile Crescent also. In the Hittite country these horse-breeding invaders seem to have formed a ruling class as the Normans did among the Anglo-Saxons of England. In language the result was a mixture of speech like that which arose much later from the commingling of Norman French and Anglo-Saxon. The non-Indo-European, Early Anatolian speech continued to be used for centuries after the invasion. Some orientalist call it "Proto-Hattic." The new, mixed language of course contained many Early Anatolian words, used side by side with Indo-European

² Cf. B. Hrozný in *Archiv orientální*, I (1929), 273.

words and grammatical forms. For over a thousand years this mixed speech was an important language of the Hittite world. We may therefore call it "Hittite" as distinguished from the language of the pre-Indo-European age. The cuneiform tablets of Asia Minor have revealed other languages and dialects spoken in the Hittite world, but with these we cannot here attempt to deal.

In spite of the introduction of the horse by Indo-Europeans, civilization remained for a time at a low level in the Hittite world. The rise of the civilization which we may call Hittite was initiated by influences from the Fertile Crescent. Even as far back as the reign of Sargon of Akkad, in the twenty-sixth century B.C., the caravans of Babylonian merchants were common in the west, and the mercantile interests of Babylonia in the Hittite world required military protection at the great king's hands. In the last two or three centuries before 2000 B.C. communities of merchants from Assyria settled in the Hittite cities. These business communities from the Fertile Crescent gradually made the Hittites acquainted with commercial transactions. In doing business the Hittites themselves learned to read the clay-tablet bills and invoices, written in cuneiform, which the Assyrian merchants brought with them. Such tablets (Fig. 132) had been found in two Hittite cities before the Oriental Institute began work in the Hittite country. The excavations at Boghaz Köi have even uncovered fragments of clay-tablet dictionaries with three columns: the first Sumerian, the second Babylonian (Akkadian), and the third Hittite. These westerners of the ancient East had thus learned to write their own Hittite words in cuneiform. At first they had used cuneiform to write Assyrian only.³ When they wrote letters to foreigners abroad, they continued to do so in the speech of Assyria. Eventually, however, they learned to use the cuneiform signs for writing their own mixed speech which we have called Hittite. Thus the clay tablet became common in the Hittite world, and it was probably through the Hittites that the use of clay tablets passed over into Crete. After the introduction of writing the Hittites made noticeable progress, and by 2000 B.C. they were a highly civilized people fully able to

³ Assyrian and Babylonian are two slightly different dialects of a common language which the texts themselves call Akkadian.

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compete with the greatest nations of the ancient Near East. The Hittites were rivals first of Assyria, then of Egypt. Their two great periods may be called the First Hittite Empire (about 2000-1750 B.C.) and the Second Hittite Empire (about 1400-1200 B.C.).



FIG. 132.—LIST OF INVESTMENTS HELD BY AN ASSYRIAN MERCHANT IN ASIA MINOR

Enlilbani, the merchant, has carefully written out on this tablet a list of nine loans, all of silver, which various people are owing him. He did not make easy terms with these people; the interest he charged ranged from 24 per cent to 30 per cent. Indeed, one unfortunate debtor was obliged to pay as interest $1\frac{1}{2}$ shekels per month, or 18 shekels per year, on a loan of only 15 shekels. The Assyrian merchants had evidently learned well the ways of the Babylonian business man.

The earliest Hittite king of whom we have any knowledge was Anitta or Anita, who arose in the city of Kussar, in eastern Asia Minor, probably in the twentieth century B.C. The exact location of Kussar is not known, but two cuneiform tablets found in the Alishar mound excavated by the Oriental Institute (see p. 279) name Anita (this king or another?). Hence there is a possibility that we should identify Alishar with the ancient Kussar.⁴

⁴ See pp. 290-94.

It is quite clear that the Hittites did not then form a single nation, but lived in a number of kingdoms which, like the later Greek kingdoms, were often at war with one another. The leadership was finally gained by the kingdom of Hatti,⁵ which lay inside the great bend of the Halys River in central Asia Minor. Its capital was called Hattusas. The kings of Hatti were able to conquer a group of neighboring kingdoms and thus to build up a small empire. There was already some contact with Egypt, for Dr. von der Osten found an inscribed statuette of an Egyptian of this period in central Anatolia at Kırık⁶ Kaleh east of Ankara (see Fig. 133), and another Middle Kingdom Egyptian statuette had previously been found at Adana.⁷ In the days when the power of Hammurabi's successors at Babylon was tottering, a great king arose in Hattusas whose name was Mursil,⁸ the first of that name. He invaded Syria and, marching down the Euphrates, captured the city of Babylon itself, plundered the city, and carried its wealth back to Hatti. It was this invasion by Mursil I which completed the overthrow of the last of Hammurabi's line, the First Dynasty of Babylon, probably about 1749 B.C. This Hittite invasion of Babylonia was only a temporary raid, not a lasting conquest of the country. The successors of Mursil I were less able than he, and shortly after his time the First Hittite Empire fell, without having come into collision with Egypt.

The Second Hittite Empire, which arose about 1400 B.C., remained for two centuries the greatest power in Western Asia. Its

⁵ In this and other Hittite names which we are spelling with *h*, the actual sound is a stronger guttural which is often put into English as *kh*. The name "Hatti" is of course the origin of our modern name "Hittite." The closeness of the resemblance will be evident when the modern ending *-ite* is removed, leaving *Hitt*.

⁶ The Turkish language is now officially written not in Arabic characters but in our Western alphabet. To provide symbols for all the Turkish sounds, the Turks have added a few extra letters. One of these is so convenient that we keep it here. The undotted *ı* expresses a vague vowel sound similar to that of English *e* in "her."

⁷ See T. G. Allen in "Oriental Institute Publications," V, 66-67.

⁸ In our spellings of this and other Hittite names the *s* is a simplification such as the Greeks used for the original *sh* sound, which their language was unable to write. The name of Mursil, for example, is probably to be identified with that of the later "Mausolus," whose elaborate tomb has given us our word "mausoleum."

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founder, who bore the long name Suppilulyuma, was the ablest soldier Western Asia had seen since the campaigns of Thutmose III



FIG. 133.—AN EGYPTIAN STATUETTE OF ABOUT 2000 B.C. FOUND AT KIRIK KALEH IN CENTRAL ASIA MINOR

It was probably brought into the Hittite country by the Egyptian whom it portrays. He is named in the prayer inscribed on the plinth.

of Egypt, which had begun less than a century before those of the great Hittite. When Suppilulyuma appeared in Syria and on the banks of the Euphrates after 1400 B.C., he was breaking up the northern conquests of his great Egyptian predecessor. There was no Thutmose III to turn back the powerful Hittite soldier. Demoralized by the religious revolution of Ikhnaton, the Egyptians could only helplessly watch the advance of the Hittites as they conquered all Syria and made it Hittite territory (cf. chap. xiii). Thereupon Suppilulyuma crossed the Euphrates and crushed the power of Mitanni. Feeble Assyria was at that time the vassal of Mitanni, and the Hittite conqueror of Mitanni was therefore lord of Western Asia.

Among the clay tablets which have been dug up in the Hittite capital of Hattusas there is a remarkable cuneiform letter which was written at this time to the great Hittite emperor by a queen of Egypt who was either Ikhnaton's widow or his third daughter, who had married Tutenkhamon. This letter is striking evidence of the Hittite conqueror's greatness and power; for the Egyptian queen tells him that she has no son to occupy her dead husband's throne, and she begs the Hittite ruler to send one of his sons to become her husband and thus to assume the kingship of Egypt. This marriage, if it had taken place, would have made the Hittite royal family supreme over both the Egyptian and the Hittite empires. The two together would have formed the greatest empire the world had ever seen. But the Hittite emperor was suspicious of the Egyptian queen's extraordinary proposal, and before sending his son he made an investigation. When, after this delay, he did finally send one of his sons, it was too late. Failing to reach the waiting Egyptians until after the powerful enemies of Ikhnaton's family had pushed aside the widowed queen, the young Hittite prince was seized and slain. Thus Suppilulyuma lost the priceless opportunity of gaining control of Egypt without striking a blow. But he had other sons, and these he crowned as the leading kings of Syria and thus made the northern end of the Egyptian Empire his own. It is in this region that the Institute has established a Syrian-Hittite Expedition (see chap. xiii). On the south his empire extended down to Palestine, which Egypt continued to hold; on the east, beyond

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the Euphrates, his territory included much of Mitanni, and his eastern boundary for a time lay far over toward Assyria. On the north and west the Second Hittite Empire included the larger part of Asia Minor. The powerful commercial city of Troy must have felt the pressure of Hittite power, if it was not indeed a vassal of the Hittite conqueror. By 1350 B.C. the Hittite Empire was the most powerful state that had ever arisen in Western Asia. Its influence was felt not only in Asia but throughout the eastern Mediterranean world.

The two empires, Egyptian and Hittite, were now rivals for the leadership of the world. It was a rivalry which was fought out for over a quarter of a century between the grandsons of Suppilulyuma and the great pharaohs Seti I and Ramses II. As the war went on, especially after 1300 B.C., the rise of Assyria gave the Hittite emperors increasing uneasiness. They made treaties with their vassal kings in Syria which pledged the latter to act as enemies of Assyria. Moreover, among the clay tablets dug up at Hattusas is an office copy of a very interesting letter urging the young king of Babylon to attack Assyria from behind.

Then, as dissensions arose among the Hittites themselves, Suppilulyuma's grandson, Hattusil, arranged a treaty of peace with Ramses II. Thus the struggle between these powerful rivals ended. Intimate relations between the two royal families were established. Even the queens of Egypt and of Hatti exchanged friendly greetings and letters of congratulation on the new peace pact. These clay-tablet letters, written about 1270 B.C., were found by the modern excavators lying among the royal files and records dug up at the Hittite capital. Later the Hittite emperor sent his daughter to Egypt to become a wife of Ramses II. On the walls of various Egyptian temples, one of them almost as far south as the Second Cataract in Nubia, the Pharaoh's sculptors carved the scene depicting the arrival of his Hittite bride (cf. Fig. 9). The great migratory movements which afterward inundated and destroyed the Hittite Empire are reflected to us very vividly in the records which the Institute's Epigraphic Expedition is copying from the walls of the Medinet Habu temple (see p. 200).

The clay-tablet records of the Hittite emperors are the earliest

historical narratives in any literature which display a literary prose style. The Hittite scribes were interested in literature, and this interest led them to make copies of old Babylonian writings with evident pleasure. The story of the Babylonian hero Gilgamesh was known throughout the whole of Asia Minor. Besides religious compositions there were even special treatises, such as an essay on horse-breeding which the Hittites borrowed from Mitanni (cf. p. 267). Unlike the scribes of the other great civilizations of their time, the Hittite writers were interested in being known as authors, for they attached their names to their writings. Though they are the earliest known self-conscious authors, they thus showed a very modern spirit.

As the Hittite emperors began to erect stone buildings, they may have felt the need of a larger monumental style of writing which would make it possible to decorate a building with historical records as the Egyptians did. At any rate there came into use a system of writing made up of picture signs which show Egyptian influence. Carved on rocky cliffs or masonry walls, records written in these new *hieroglyphic* signs still look down upon the traveler throughout a large part of Asia Minor from the Aegean to the Euphrates. The hieroglyphs were also commonly engraved on seals (cf. Fig. 149).⁹ In a very able recent essay Bossert has shown that this writing is related to that of Crete.¹⁰ As we shall see, the Institute is interested in the decipherment of this important system of writing and has published two investigations devoted to an understanding of it.¹¹

Hittite civilization reached its highest development in the great days of the Egyptian Empire, especially after 1400 B.C. Cnossus was still in the Grand Age, and Troy, her northern rival, had built

⁹ Scholars differ as to the period which produced this Hittite hieroglyphic writing. The majority incline to the belief that it did not arise until toward the end of the Second Hittite Empire, and some orientalists even think that this writing was produced by another people. There is, however, some evidence for an earlier date, before the Second Empire. Cf. H. H. von der Osten in *Metropolitan Museum Studies*, II (1929/30), 123-30.

¹⁰ Helmuth Th. Bossert, *Šantaš und Kupapa* ("Mitteilungen der Altorientalischen Gesellschaft," Bd. VI, Heft 3 [Leipzig, 1932]).

¹¹ See pp. 417-18.

the splendid Sixth City. Lying between the great civilizations of the Near East and of Southeastern Europe, Hittite civilization served as a link connecting the two, and the influences which it passed on to the early Aegean world were of permanent importance. From the Hittite world (Lydia) the Greeks later received coinage, besides important items in architecture and religion. In art the Hittites transmitted many motives to Greece and the West; among them were symbols still current in decorative art, such as the hovering eagle. What the Hittite civilization contributed was sometimes, as in this instance, borrowed from Near Eastern neighbors. In return the Hittites transmitted important elements of architecture to the Assyrians, and it is not unlikely that the royal annals written by the Hittite scribes had an influence on prose writing among the Assyrian scribes who composed the clay-tablet records of the Assyrian kings.

Politically and economically the Hittites left a permanent mark on the history of the early Near East. We have seen that they crushed Mitanni and for a long time stopped the westward expansion of Assyria, and that they had much to do with breaking down the Egyptian Empire. Besides their powerful chariotry their strength in war was doubtless to some extent due to the fact that they held the sources of iron. However, the later Assyrian Empire organized the first *large* armies completely equipped with iron weapons.

Just as the decipherments of Egyptian hieroglyphic and of Babylonian cuneiform revealed entirely new worlds of history and of civilization, so the decipherment of the Hittite cuneiform clay tablets found at Hattusas has disclosed to us a panorama of the Hittite world stretching back some eight hundred years, from 1200 to about 2000 B.C. It was the ability to read Babylonian cuneiform which made this decipherment possible; for, in beginning to write, the Hittite scribes employed Babylonian word-signs (ideograms). But when a Hittite scribe wrote the Babylonian word-sign for "man," he did not consider that it stood for the Babylonian word for "man"; in reading the sign he pronounced the *Hittite* word for "man." Hittite tablets from Hattusas contained so many of these Babylonian word-signs that the Czechoslovakian scholar Bedřich

Hrozný succeeded in 1915 in deciphering their language. Since the war our knowledge of Hittite has increased greatly. Before his association with the Oriental Institute, Dr. Emil Forrer had shown that in the tablets found at Hattusas several languages are represented. It is the decipherment of Hittite *cuneiform* which has made possible the brief sketch of Hittite history inserted above. Un-



FIG. 134.—EXPLORATION BY AUTO ON ONE OF THE "ROADS" OF CENTRAL ASIA MINOR

doubtedly the story will be greatly clarified when we are able to read the Hittite *hieroglyphic* writing also.¹²

It has long been well known that the homeland of the Hittites after their first emergence into history is thickly strewn with evidences of their occupation. But archeological research in Asia Minor as a whole is still in its beginnings. The task of organizing systematic research among undated remains of such vast extent, covering so long a period of time and so large a territory, was beset with problems. Obviously the first effort would have to be along

¹² Cf. pp. 417-18.

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the line of exploration (Fig. 134). The beginnings of such exploration and the sources of its support have already been discussed (pp. 78-79).

The heart of the Hittite civilization and the center of its power was known to be the basin of the Kızıl Irmak, the ancient Halys River (cf. p. 270). This region was therefore selected as the center of exploration. In 1926, under the leadership of Mr. H. H. von der Osten, the Anatolian-Hittite Expedition began work. In 1928 the exploration was continued eastward, chiefly into the area between the Kızıl Irmak and the upper Euphrates. The southeastern portion of Asia Minor, which had heretofore not been touched, was undertaken in 1929. A scouting trip in that year through the Commagene region added some data to the observations which had been made in 1928. It is a surprising fact that these preliminary explorations¹³ resulted in the discovery of several hundred ancient sites heretofore unknown. This fact demonstrated the necessarily preliminary character of all scientific operations in the great Hittite world.

The ideal plan which the Institute hoped to carry out was to develop a staff for each of three stages of investigation. The first stage was obviously such exploration as the three campaigns above mentioned. The second should be a careful survey by a party especially organized for this purpose, which, operating within a limited area, should map it in detail. It was found that a district 40 kilometers on a side formed a convenient unit. The third stage was to be the selection of a promising site and its careful excavation. The selection of the site would, of course, be based upon the observations made in the preceding exploration and survey.¹⁴

¹³ Reported in "Oriental Institute Communications," Nos. 2, 6, and 8, and (in more detail for 1926) in "Oriental Institute Publications," Vol. V. For explorations carried on in 1930 and 1931 see "Oriental Institute Communications," No. 14.

¹⁴ The staff participating in these various phases of the work of the Anatolian Expedition as actually carried on has included the following:

H. H. von der Osten, field director, 1926—
Shefket Hilmi Bey, interpreter, 1926
Nedjmeddin Kadry Bey, interpreter, 1926-27

[Footnote continued on following page]

In the course of the exploration stage it was possible to demonstrate by means of pottery and other surface signs that many mounds of ancient débris cover early Hittite settlements. The number of such mounds, which the Turks call *hüyüks* (Fig. 135), is surprisingly great. Among the ancient Hittite towns and cities in each district marked out and isolated by the mountains, there must have been one which was the political leader and capital of the kingdom which would develop in each such district.

Thus far it has been possible to survey only one 40-kilometer square (Figs. 136-37). This square contains a very large mound, named by us, from the neighboring village of Alishar, "Alishar Hüyük." Financial considerations made it unhappily impossible to develop and maintain personnel for all three stages of field operations—exploration, survey, and excavation. Even though it proved impossible to organize permanently the exploratory work with its own staff, it nevertheless ran rapidly ahead of the survey, which, as above indicated, has not yet passed beyond the completion of the

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- Erich F. Schmidt, archeologist, 1927; joint field director, 1928-29
 Frank H. Blackburn, surveyor, 1927-30
 Josef Reifenmüller, camp superintendent, 1927-32
 Ali Sherafeddin Bey, government commissioner and draftsman, 1927-28
 Lutfi Tachsin Bey, interpreter, 1927
 Ernst K. von Brand, assistant, 1928
 Richard A. Martin, anthropologist, 1928-31
 Mehmet Ali Bey, draftsman, 1929
 Jack S. Bolles, architect and surveyor, 1929
 Muharrem Bey, government commissioner, 1929-30
 Shemseddin Ruhi Bey, draftsman, 1929
 Hermann Schüler, photographer, 1929-32
 Reha Tachsin Bey, sculptor, 1929
 O. S. J. Albert, anthropologist, 1930-32
 R. Carl Haines, architect, 1930-32
 Calvin W. McEwan, assistant, 1931-32
 J. A. Morrison, in charge of survey, 1930
 B. P. Neil, photographer, 1930
 K. E. von der Osten, volunteer, 1930
 Avni Bey, government commissioner, 1931
 Emin Ali Bey, government commissioner, 1931
 R. D. Morrison, volunteer, 1931

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first square. Nevertheless, a great deal of additional surveying has been done, as we shall see, at a number of important points.

For excavation, as already intimated above, Alishar Hüyük (Fig. 138) was selected. On May 27, 1927, with Mr. (now Dr.) von der Osten as field director, the actual excavation of the mound was begun. It lies about 130 miles east-southeast of Ankara and some



FIG. 135.—THE SALIR HÜYÜK, A TYPICAL EXAMPLE OF AN ANCIENT CITY MOUND IN ANATOLIA

53 miles southeast of ancient Hattusas (Boghaz Köi), the capital of the Hittite Empire. The excavations have since continued for six summer seasons (Fig. 139). In 1928 and 1929 Dr. Erich F. Schmidt was associated with Dr. von der Osten as joint field director. Alishar Hüyük is an enormous mound, consisting of a roughly circular elevation (evidently the citadel) rising above an extensive oval terrace covering the ruins of the surrounding town itself (Fig. 140). It is about 520 meters (1,700 feet) long and 350 meters (1,150 feet) wide and is estimated to contain some three-

quarters of a million cubic meters of accumulated débris (Figs. 141-42).



FIG. 136.—ALISHAR SQUARE

The 40-kilometer square area around Alishar, from Kiepert's *Karte von Kleinasien* (Berlin, 1914). This map, the best available when the Oriental Institute began its work, depended largely on the itineraries of explorers.

When the excavation began there was no available body of observations establishing the sequence and the characteristics of the cultures which an Anatolian mound might be expected to disclose.

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The excavation of Alishar Hüyük was therefore a task of pioneering, in which it was indispensably necessary to secure results in the very shortest possible time. The approved and preferable method, as



FIG. 137.—ALISHAR SQUARE

The same area shown in Figure 136, as surveyed during 1927-28 by the Oriental Institute. In this hitherto unsurveyed region the survey at once disclosed many striking variations from the locations inferred by Kiepert for even such prominent features as the stream valleys. Some geographical names misunderstood by Kiepert's authorities were also corrected, and many names were added.

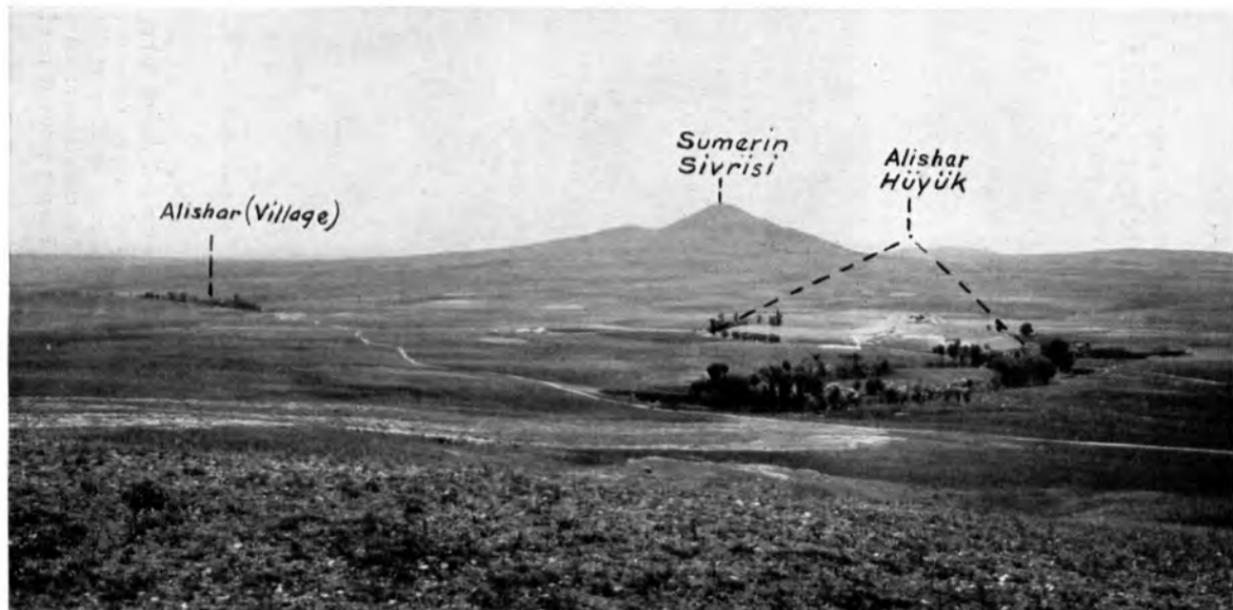


FIG. 138.—ALISHAR HÜYÜK AND ENVIRONMENT, FROM THE EAST



FIG. 139.—ALISHAR CAMP IN 1929

followed at Megiddo for example (see chap. xi), is of course that of removal of the accumulations stratum by stratum, with careful registration and recording of each stratum as the clearance advances. Such a method, if we had employed it at Alishar Hüyük, would have postponed any adequate knowledge of the culture sequence in Anatolia for many years, probably twenty or thirty. For financial reasons alone it was obvious that in a country where



FIG. 140.—ALISHAR HÜYÜK FROM SOUTH OF WEST

The main mound (*A*) covers the ancient citadel. From it project three spurs (*B*, *C*, and *D*), which form the most prominent portion of the surrounding terrace. Almost 85 feet deep within Mound *A* was found the Neolithic (Late Stone Age) house mentioned on page 288.

such work was in its beginning stages a program of this length before definite results could be reached was impracticable. On the other hand, random trenching and the sinking of shafts and soundings—a practice which had been followed with disastrous results throughout the Near East, even by Schumacher at Megiddo—must at all costs be avoided.

In 1927 numerous irregularly shaped plots were cleared, the limits of which had been dictated mostly by walls and buildings, so that each one formed a "locus." These were eventually connected. In 1928 this method was modified into a system of oriented squares, each 10×10 meters in area (Fig. 143). Each square is a unit in a



FIG. 141.—THE WHEELBARROW TRAIN AT ALISHAR HÜYÜK IN 1927



FIG. 142.—ARRIVAL OF THE FIELD RAILROAD AT ALISHAR IN 1928

This equipment for removal of the excavated débris replaced the wheelbarrows shown in Figure 141. The railroad is seen in operation in Figure 31.

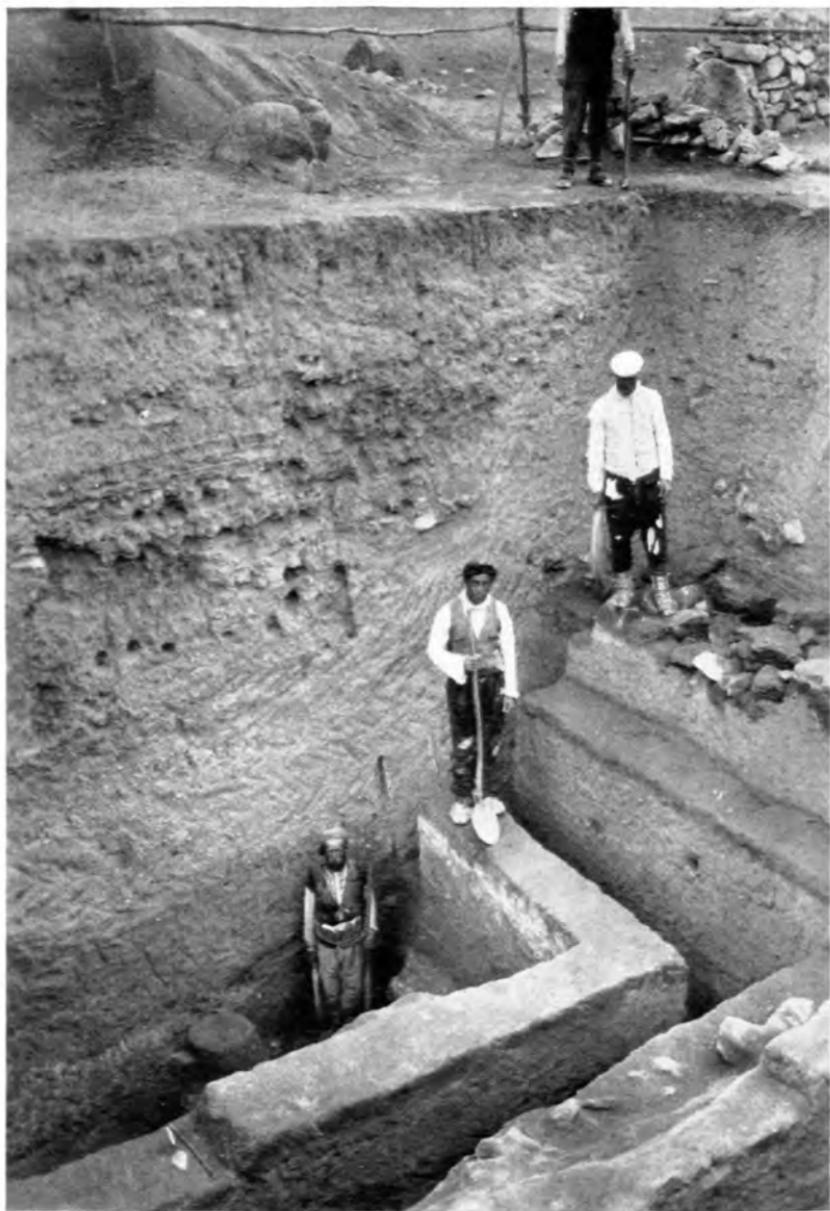


FIG. 143

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grid covering the whole mound as at Megiddo (cf. p. 241 and Fig. 116). The discovery of important buildings in test plots required in places the excavation of large blocks of squares in order to clear



FIG. 144.—EXCAVATIONS ON THE TOWN TERRACE OF ALISHAR HÜYÜK IN 1931

A large area composed of a whole series of square plot units is dominated by a Hittite mansion.

the buildings more fully (Fig. 144). This again made possible the development of the "locus" system as at Megiddo (cf. p. 243).

In general, the result of the excavation of Alishar Hüyük has been to disclose for the first time the culture sequence in Anatolia—a sequence which will no doubt be found at other sites as archeo-

FIG. 143.—A TYPICAL SQUARE PLOT AT ALISHAR HÜYÜK, AFTER EXCAVATION

The walls standing at different levels belong to superimposed structures of successive occupations.

logical investigation of Asia Minor proceeds. The culture development revealed was traced backward, stratum by stratum, from a practically modern stage to the Neolithic over 80 feet down in the citadel mound. In his preliminary report¹⁵ Dr. Schmidt says: "It is fascinating to see time expressed by space. At the end of the third season a test square had reached a point more than 16 meters (about 50 feet) below the top of the most outstanding elevation. These 16 meters of remains of human habitation had accumulated during three to four thousand years. . . . About 9 meters consisted of remains deposited prior to 2000 B.C., while the rest had accumulated during the following millennia."¹⁶ Dr. von der Osten later carried work in this plot about 45 feet farther down and found a Neolithic house at a depth of almost 85 feet (Fig. 145).¹⁷ From the Neolithic stage at the bottom, which has not yet been extensively cleared, owing to its extreme depth, the strata exposed in the walls of the plot disclose the gradual introduction of copper, doubtless in several stages, then the various stages of bronze and, above them, of iron. Finally, on the mound terrace a Byzantine church was found. This fundamental revelation, with the stratified evidence still preserved and observable on the spot, is unique in such research. In so far as the writer knows, there is at the present day no other *single* site displaying an accumulation of stratified ancient remains in which all the stages from Neolithic to Christian are still lying undisturbed. The body of archeological evidence from these strata of the citadel mound and from the town terrace surrounding it is, of

¹⁵ *Anatolia through the Ages* ("Oriental Institute Communications," No. 11 [Chicago, 1931]), pp. 47-50.

¹⁶ Final reports on the seasons of 1927-29 appear in "Oriental Institute Publications," VI-VII and XIX-XX.

¹⁷ The excavations of 1930 and 1931 are described in "Oriental Institute Communications," No. 14.

FIG. 145.—A STRATIFIED CULTURE SEQUENCE 100 FEET DEEP, EXTENDING FROM A NEOLITHIC (LATE STONE AGE) STRATUM AT BOTTOM TO PHRYGIAN REMAINS AT TOP

The vertical scale on the right edge is in meters; the sequence of cultures stratigraphically represented at Alishar Hüyük covers more than 5,000 years.

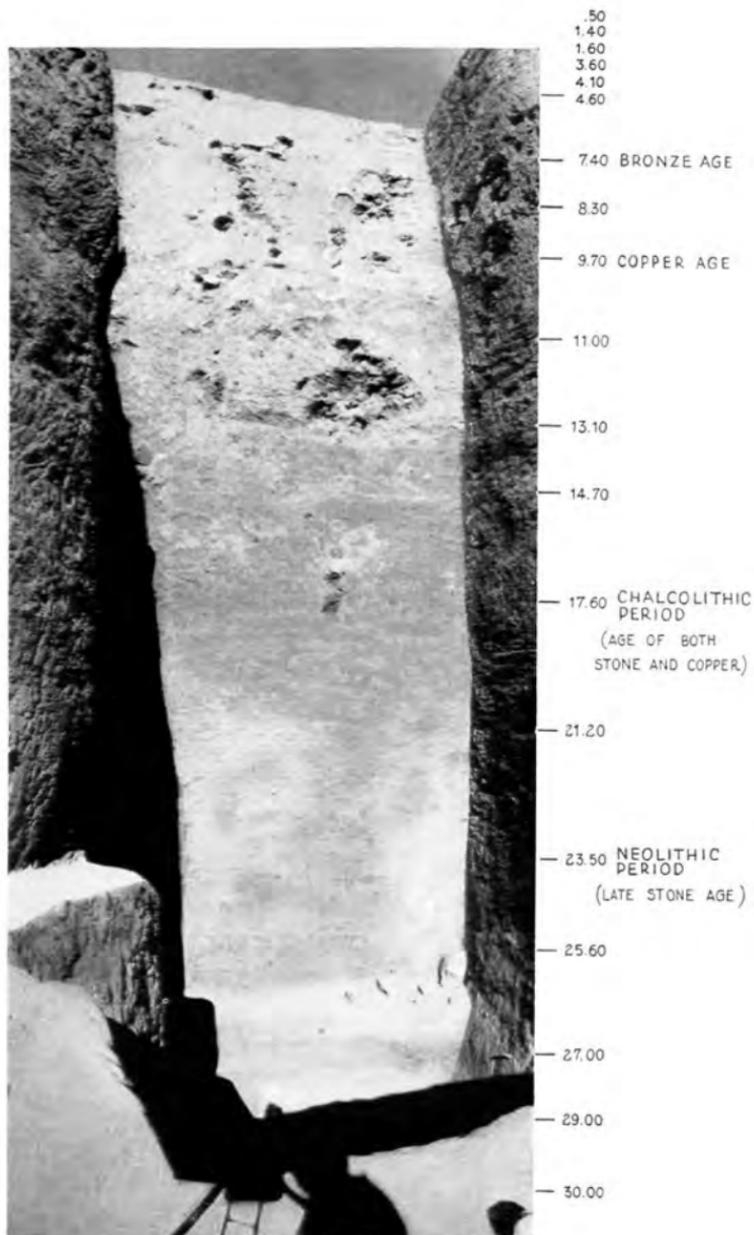


FIG. 145

course, very large (Figs. 146-47). The records kept by the expedition contain some fifteen thousand cards.

For the place of the Hittites in the above described culture sequence decisive written evidence is still lacking. Not least important, however, among the objects revealed is a mass of cuneiform tablets, the first of which were laid bare by Dr. Schmidt in 1929. This discovery makes Alishar the third ancient Anatolian city which has been found to contain cuneiform records. The other two are Boghaz Köi, the site of the ancient Hittite capital, and Kültepe near Kayseri (cf. pp. 268 f.).

A cast of the first of our Alishar tablets was handed by Dr. Schmidt to Professor Julius Lewy of Giessen, who found that it was a legal document listing numerous signatories, among them "Anita the prince." Without knowing of Lewy's reading, Forrer also reported to the writer the presence of this prince's name on our first Alishar tablet.¹⁸ This name is familiar to us from the Boghaz Köi tablets as that of a king of Kussar in the twentieth century B.C., the earliest known Hittite ruler from whose reign an inscription has survived. A few more tablets were found at Alishar in 1930, and in the following year the excavations disclosed a considerable body of much better preserved specimens (Fig. 148), forming altogether a group of about sixty tablets. Their inscriptions are now being studied at the Chicago headquarters of the Institute by Dr. Ignace J. Gelb.

These Alishar tablets are of the type commonly known as "Capadocian" from the region in which they have been found. They are written in Assyrian cuneiform. They are of great importance at Alishar because there for the first time they have been found in a controlled excavation so that they furnish a definite date at a certain point in the stratigraphic culture sequence disclosed by the archeological remains. Dr. Gelb reports that these Alishar tablets are of two classes: letters and business documents. They contain many new business terms and a group of Assyrian and Early Anatolian (Proto-Hattic) proper names of great ethnological value.

¹⁸The reading has since been confirmed by Professors Chiera and Poebel. A copy by Poebel is published, with notes by both scholars, in "Oriental Institute Publications," XIX, 140-42.



FIG. 146.—ALISHAR DISCOVERIES INSTALLED IN THE MUSEUM AT ANKARA



FIG. 147.—TYPICAL ALISHAR JARS OF DIFFERENT PERIODS. SCALE, 1:5
Those above are Hittite; those below are later

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The date formulas involve an unusual five-day week known elsewhere at Kültepe only. Moreover, the Alishar tablets and those of



FIG. 148.—CUNEIFORM TABLETS AS FOUND AT ALISHAR IN 1931

Kültepe employ the same system of dating by two eponyms. Historically, therefore, the Alishar tablets are closely connected with those of Kültepe.

Dr. Gelb now reports a second tablet containing the name of Anita. It deals with the freeing of a group of six slaves. The emancipation is "by the hand of Anita, the great prince." It may be accepted as certain that our city of the Alishar mound was in the territory of King Anita, but whether it was his royal city of Kussar is not definitely established.

The written evidence discovered at Alishar includes also examples of Hittite hieroglyphic found engraved on seals (Fig. 149). These have still to be studied.



FIG. 149.—SEAL BEARING HITTITE HIEROGLYPHS. ACTUAL SIZE
The view at right shows a modern impression

In architecture the investigations at Alishar Hüyük have been very fruitful. Dr. von der Osten reports that when all the materials have been carefully studied we shall have a basis for reconstructing an extensive series of the successive fortifications of the ancient city from the Copper Age to the Phrygian period (Fig. 150). In the citadel mound the succession of strongholds extends from about 2500 to 600 B.C.; that is, we have the history of the citadel for some nineteen hundred years.

The racial connections of the various early inhabitants of Anatolia are still problematical. On the monuments, especially in the sculptures and paintings of ancient Egypt, the Hittites are clearly depicted as a round-headed people. But as to the racial origins of all these peoples we are still very much in the dark. It is fortunate, therefore, that several ancient bodies have been found in various strata at Alishar. They form a difficult type of evidence to



FIG. 150.—THE PHRYGIAN FORTRESS AT ALISHAR HÜYÜK. HYPOTHETICAL SKETCH BY DR. SCHMIDT

salvage conscientiously, but the expedition has carefully preserved all such evidence (Fig. 151). In so far as the Institute shops in Chicago have been able to do so, the skulls have been carefully reconstructed for craniometric investigation. These skeletons are the only such materials yet available.

A brief investigation following a survey (Fig. 152) of a vast city fortification on the Kerkenes Dagh, northwest of Alishar, unfortunately gave no clue as to its builders, except that they seem to have been later than the Hittites. An account of the Institute's test excavations there in 1928 was published by Dr. Schmidt.¹⁹

It had long been supposed that the famous ruins at Gavur Kalesi were those of a Hittite fortress; but a test clearance at this point by Dr. von der Osten (made at the suggestion of His Excellency, the President of the Turkish Republic) proved that the site was originally a Hittite place of worship. Dr. von der Osten has produced an architectural reconstruction of considerable interest (Fig. 153). According to his conclusions the features which have been regarded as fortifications are due to remodeling by the Phrygians.

In the main we have been able to distinguish between the pre-Hittite, Hittite, and Phrygian cultures. In future excavations the sequence of culture stages demonstrated at Alishar should help to solve other problems, such as the development of each culture and the sources of the intrusive populations.

In connection with the field work of the Anatolian Expedition some supplementary researches of great interest have been carried on by the Institute. In the summer of 1929 Dr. Julius von Mészáros, then co-director of the Ethnographical Museum at Ankara, informed the Director of the Oriental Institute of an extraordinary linguistic island in northwestern Anatolia—a group of twelve tiny villages in each of which a few old men and women still speak a language entirely unintelligible to their immediate Turkish neigh-

¹⁹ Erich F. Schmidt, "Test Excavations in the City on Kerkenes Dagh," *American Journal of Semitic Languages and Literatures*, XLV (1928/29), 221-74.

FIG. 151.—BURIALS AT ALISHAR HÜYÜK
An earth burial and urn burials of the Copper Age



FIG. 151

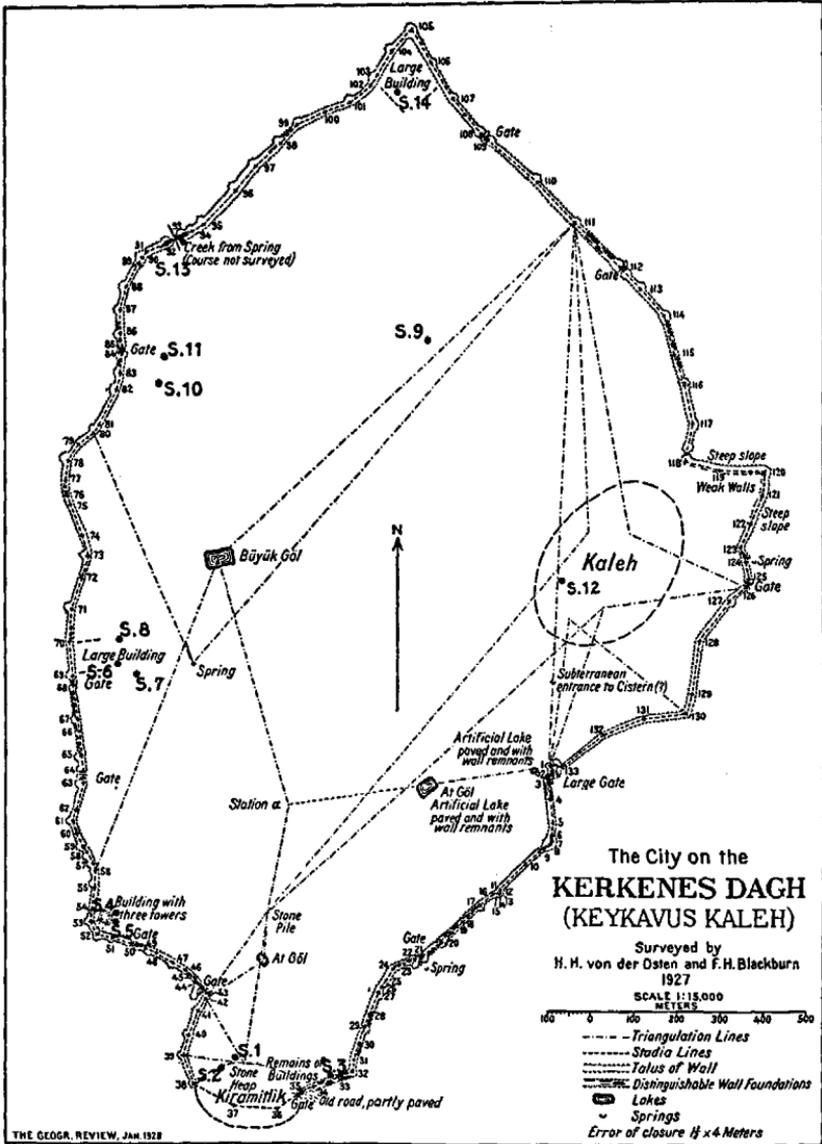


FIG. 152.—PLAN OF THE GREAT CITY ON THE KERKENES DAGH, AS SURVEYED BY THE ANATOLIAN EXPEDITION

bors. The language of these people is known as "Päky." It is related to the language of the Circassians. After the Russian conquest of the Circassians in 1864 the Päky-speaking group mi-



FIG. 153.—THE SANCTUARY OF GAVUR KALESI, AS EXCAVATED AND RECONSTRUCTED BY DR. VON DER OSTEN

grated into Anatolia, where the Turkish government received them kindly. In this migration they were, it would seem, returning to their own original ancestral region, from which they had wandered northward into the Caucasus probably as early as the first centuries of the Christian era. Since their modern resettlement in Anatolia their language has been rapidly dying and will soon be extinct.

On the basis of preliminary information about this extraordinary linguistic survival, Dr. von Mészáros concluded that it was very old and that it might throw light on some form of ancient Hittite speech. The Institute therefore commissioned Dr. von Mészáros to undertake an investigation of this language. He was thus enabled to spend his summer vacations among these people in 1930 and 1931. There he made a scientific record consisting of such examples of Päkhy speech as he could collect: proverbs and daily conversation, etc. Out of these materials he has put together a dictionary and a grammar, and on the basis of these researches he has concluded that the vanishing language still spoken by this tiny nucleus of people is the last disappearing remnant of what he calls "*die chattische Sprache*," by which he means the speech of the oldest autochthonous stratum of population in Anatolia now known to us, the Proto-Hattic (cf. pp. 267 f.).

It may still be necessary for us to await the verdict of scholars before accepting without question the validity of these conclusions. But the evidence collected by Dr. von Mészáros is very convincing, and he himself is so sure of the correctness of his conclusions that he regards the philological materials which he has collected as for the first time furnishing science with a fundamental basis for the further decipherment and understanding of Proto-Hattic speech as preserved in cuneiform sources. He has further concluded that in ancient Hittite times Proto-Hattic was a sacred language, that it was the ceremonial court language at the capital, Hattusas, and that Hittite emperors bore Proto-Hattic names. The Institute is now publishing these important researches by Dr. von Mészáros in a volume which will contain a historical introduction and a complete grammar and dictionary of the Päkhy language.

CHAPTER XIII

THE SYRIAN-HITTITE EXPEDITION

The most obvious illustration and doubtless the most conclusive proof of the intrusion of a Highland population into the Fertile Crescent is to be found in the physiognomy of the Hebrews, to which we have already referred (p. 265). There is, furthermore, very important historical evidence of the overflow of Hittite population into neighboring Syria. The Tell el-Amarna letters furnish us with a graphic picture of the gradual dissolution of the Egyptian Empire in Asia, and in those letters it is possible to trace the intrusions of the Hittites into Syria. The cuneiform records discovered at Boghaz Kõi have likewise thrown a flood of light on the history of Syria at the critical period when Egypt was being displaced by the power of the Hittite sovereigns. The overthrow of the Hittite Empire, in its turn, was accompanied and caused by great migrations from the north and northwest which overwhelmed the whole Hittite country. Effects of these migrations are disclosed to us in the wars of Ramses III so impressively depicted on the walls of his great temple at Medinet Habu in Egypt (see pp. 215-20). Nowhere have the interrelationships of Oriental Institute researches been more clearly illustrated than in its investigations at Medinet Habu and in the Hittite country of Asia Minor.

The Hittite overflow into Syria left numerous records in Hittite hieroglyphic. Such records were first discovered in this region, and the city mounds of North Syria must cover many more. The westward expansion of Assyrian power, as disclosed to us in the Assyrian records, found a whole group of Hittite kinglets and dynasts ruling small kingdoms in North Syria. The region was one of great strategic importance from both the commercial and the military viewpoints. Marching straight westward from Nineveh the Assyrian conquerors forded the Euphrates at Til-Barsip. This same ford was used by the caravans of the merchants carrying on inter-

national traffic between the east and the west. It was a commerce of which the volume must have been considerable, for it comprised the bulk of the interchange of commodities between the Mediterranean, with its Syro-Phoenician industrial centers, in the west and Assyria and Babylonia in the east.

It is in North Syria that the Euphrates approaches most closely to the Mediterranean. For more than 100 miles of its course it is not more than 125 miles from the Mediterranean, and at the nearest point the interval is about 100 miles. In and adjoining this roughly rectangular region of North Syria lying between the Mediterranean and the Euphrates grew up numerous small kingdoms which represented to a large extent the wreckage of the Hittite Empire. In culture they were closely related to the civilization of ancient Anatolia; politically, after having been vassals of Egypt, they had long been subject to the Hittite Empire. At the same time the migrations of the Arameans had distinctly affected this region. Hence its civilization was a composite of Hittite and Aramean elements, with a tincture of Phoenician also.

There were no less than nine kingdoms occupying or adjoining the area between the Euphrates and the northeast corner of the Mediterranean. Three of them were distributed along the Euphrates, beginning in the south with Bit-Adini, of which Til-Barsip was the capital. On its north was Carchemish; then, farther northward, Kummuhu (Commagene). West of these lay two kingdoms: in the south, the powerful kingdom of Hamath; farther northward, the kingdom of Yahanu, which contained the strong cities of Arpad (modern Tell Erfad) and Aleppo. North of all these was the kingdom of Gurgum, with its capital at Marash. Of the kingdoms on the Mediterranean coast, Samal, with its capital at modern Senjirli (Fig. 154), had as its southern neighbor the kingdom of Hattina, lying on both sides of the mouth of the Orontes River. The name of this kingdom clearly shows that it was of Hittite origin. Its capital was Kunulua, and it contained at least two other important cities—Aribua and Hazazi. South of the entire group above enumerated lay the kingdom of Kadesh, with its capital at the powerful fortress city of the same name situated on the Orontes near its sources (see Fig. 26). This city marked the southern extent of Hit-

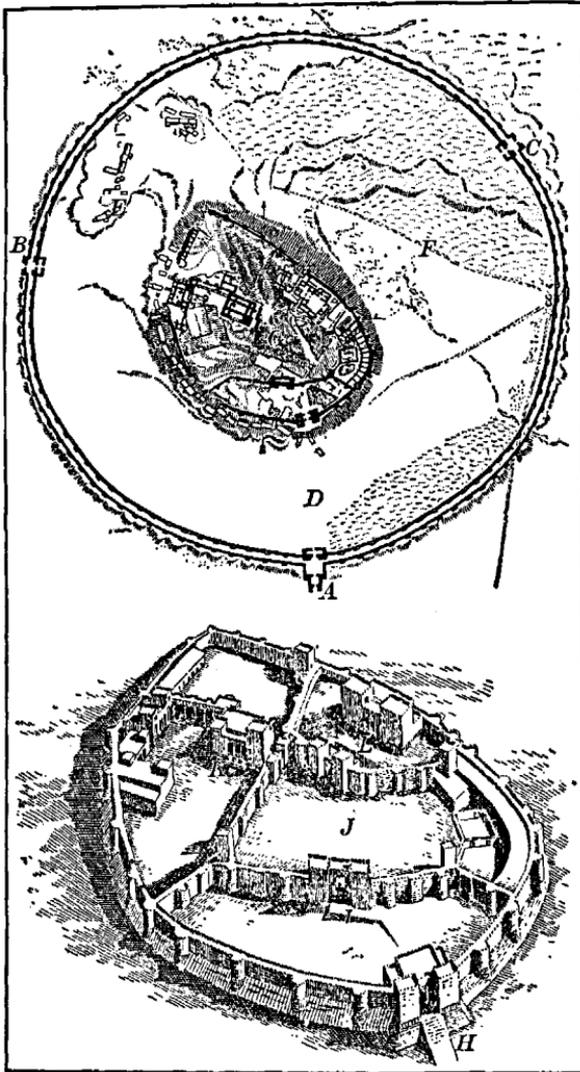


FIG. 154.—PLAN OF THE ARAMEAN-HITTITE CITY OF SAMAL (MODERN SENJIRLI).
BELOW, RECONSTRUCTION OF THE CASTLE

The city was nearly half a mile across. It was defended by a double wall of sun-dried brick, strengthened with 100 towers. The castle occupied the central hill (G).

tite conquest in the fourteenth(?) century B.C., and its civilization was not primarily Hittite.

Not a single site in this region has been completely excavated. Before the World War the English began excavations at the biblical Carchemish, capital of the Euphrates kingdom of the same name immediately north of Bit-Adini; but the work has not been continued. Similarly, the English partially excavated the mounds of Sakche-Gözü near Senjirli in the ancient kingdom of Samal. The French have recently investigated Til-Barsip, the modern Tell Aḥmar ("Red Mound"), and have likewise made some exploratory *sondages* at Kadesh.¹ The Germans have made extensive clearances at Senjirli, the capital of Samal, although they are far from complete; Hrozný thrust down some soundings in the mound of Arpad; and the Danes have recently received a concession for the enormous mound covering ancient Hamath. Modern towns surmount a number of the ancient city mounds and make excavation impossible. This is the situation at Aleppo, Marash, and Samsat, the last probably the capital of ancient Kummuhu. Thus the leading ancient capitals in this region have already been claimed by our predecessors or are covered by modern towns. The outstanding exception is in the kingdom of Hattina.

Kunulua, the capital of the land of Hattina, has never been located. It must have been a place of great importance, because after its capture and destruction by the Assyrian kings the disaster became proverbial and was cited by the Hebrew prophets as an example of the terrible havoc wrought by the Assyrian armies among the Syrian cities. Amos says:

Woe to them that are at ease in Zion, and to them that are secure in the mountain of Samaria, the notable men of the chief of the nations, to whom the house of Israel come! Pass ye unto Calneh, and see; and from thence go ye to Hamath the great; then go down to Gath of the Philistines: be they better than these kingdoms? or is their border greater than your border?²

Similarly, Isaiah also reflects the terrible impression made upon the Hebrews by the Assyrian conquest of the Syrian cities. He says: "For he [the Assyrian king] saith, Are not my princes all of

¹ On the difficulties of excavation at Kadesh see p. 59.

² Amos 6:1-2.

them kings? Is not Calno as Carchemish? is not Hamath as Arpad? is not Samaria as Damascus?"³ The "Calneh" of Amos and the "Calno" of Isaiah are presumably Kunulua, the capital of Hattina.

The Assyrian conquerors themselves describe in stately word pictures the fate of Kunulua. Both Assurnasirpal and Shalmaneser III marched across Syria in the ninth century B.C. Each left an important record of his conquest of the land of Hattina and the capture of its capital, Kunulua. Assurnasirpal says:

To the city of Hazazi, belonging to Lubarna, [king] of the land of Hattina, I drew nigh. Gold, garments (of wool), linen garments I received. I passed on, I crossed the Aprê [modern 'Afrin] River and spent the night. From the river Aprê I departed; to Kunulua, the royal city of Lubarna of Hattina, I drew nigh. Before my terrible weapons and my furious battle array he became frightened, and to save his life he laid hold of my feet. Twenty talents of silver, one talent of gold, 100 talents of lead, 100 talents of iron, 1,000 head of cattle, 10,000 sheep, 1,000 garments made of brightly colored wool, linen garments, a couch of boxwood which was sumptuously inlaid, beds of boxwood, beds which were sumptuously inlaid, many tables of ivory and of boxwood, whereof the weight could not be computed, . . . I received from him as his tribute, and I had mercy upon him. The chariots, the horsemen, and the foot soldiers of the land of Hattina I took with me, and hostages I received from him. . . . From Kunulua, the royal city of Lubarna of the land of Hattina, I departed. I crossed the river Orontes and I spent the night. From the river Orontes (Arantu) I departed. . . . Into Aribua, the royal city of Lubarna of the land of Hattina, I entered. The city I took for my own possession. . . .

At that time I marched along the side of Mount Lebanon, and to the Great Sea of the land of Amurru I went up. In the Great Sea [the Mediterranean] I washed my weapons, and I made offerings unto the gods. The tribute of the kings of the seacoast, of the people of Tyre, Sidon, Gebail (Byblos), Mahalata, Maisa, Kaisa, Amurru, and Arvad, which lies in the midst of the sea, . . . I received. . . .⁴

Assurnasirpal's successor, Shalmaneser III, was obliged to march against Kunulua to quiet an insurrection. He says:

In the twenty-eighth year of my reign, while I was staying in Calah, word was brought me that the people of Hattina had slain Lubarna their

³ Isa. 10:8-9.

⁴ D. D. Luckenbill, *Ancient Records of Assyria and Babylonia*, I (Chicago, 1926), §§ 476-79.

lord and had raised Surri, who was not of royal blood (lit., 'lord of the throne'), to the kingship over them. Dâian-Assur, the *turtan*, the chief of my large host (widespreading armies) I dispatched, sending him at the head of my army and camp. He crossed the Euphrates at its flood. In Kinalua, his royal city, he came to a halt. [As for] Surri, who was not of royal blood, the awe-inspiring splendor of Assur my lord overcame him and he went to his fate (lit., 'to the death of his fate'). The people of Hattina became afraid before the terror of my mighty weapons; the sons of Surri, together with the rebels (lit., 'sinners'), they seized and gave to me. These (rebels) I impaled on stakes. Sâsi, son of the Uzzite (or 'an Uzzite'), seized my feet. As king I set him over them. Silver, gold, lead, copper, iron, ivory, without measure, I received from them. I fashioned a heroic image of my royal self; in Kinalua, his royal city, in his temple (lit., 'the house of his gods') I had it set up.⁵

It would be not a little interesting to find the temple of Kunulua with Shalmaneser III's statue still reposing in it. It is important to note that Assurnasirpal's annals furnish some fairly precise indications of the geographical situation of the hitherto unidentified Kunulua in his statement: "I crossed the Aprê [modern 'Afrin] River and spent the night. From the river Aprê I departed; to Kunulua I drew nigh. . . . From Kunulua, the royal city of Lubarna, [king] of the land of Hattina, I departed. I crossed the river Orontes and I spent the night." From this itinerary it will be seen that after crossing the 'Afrin the Assyrian king spent the night; thereupon he proceeded to the city of Kunulua, then crossed the Orontes and spent the next night. These data indicate without question that Kunulua lies in the narrow strip between the lower 'Afrin and the Orontes. It was on the basis of these data that Forrer, inquiring among the local natives, was taken to the great mound called Chatal Hüyük (see Fig. 35), which lies a short distance north of the little village of Rihaniyyah. He was told by the natives that this is the largest city mound in the whole district. Nevertheless, on visiting the region the executive secretary of the Institute discovered another enormous mound a short distance westward. If Chatal Hüyük is indeed the ancient Kunulua and the biblical Calneh, then the other mound, known as Tell Jedeideh

⁵ *Ibid.*, § 585.



FIG. 155.—TELL JEDEIDEH, ONE OF THE ANCIENT CITIES OF THE NORTH SYRIAN KINGDOM OF HATTINA

This mound is the prominent one at the right. At left is the expedition house. In the center background rises Chatal Hüyük, the other site which the Syrian-Hittite Expedition is investigating.

(Fig. 155) is likely to be either Aribua or Hazazi, mentioned as having been plundered by Assurnasirpal.

No investigation of Hittite civilization could pretend to any degree of completeness unless it included extensive researches in North Syria. Here in the northwest sector of the Fertile Crescent, therefore, the Oriental Institute early made plans for the excavation of some important site. Plans for securing a concession to Chatal Hüyük and Tell Jedeideh had already been developed in 1930. The concession itself was not received until 1931.



FIG. 156.—THE FIELD HEADQUARTERS OF THE SYRIAN-HITTITE EXPEDITION

At Chatal Hüyük there was a considerable cemetery on the top of the mound. Arrangements had to be made with the neighboring villages for removing the cemetery and leasing not only the entire area of the mound itself but sufficient surrounding territory to furnish space for the large dump which will undoubtedly result from operations at this mound. These arrangements were made by the executive secretary. The north end of the mound, which is higher than the rest, lies about 100 feet above the surrounding plain. It must, of course, cover the royal citadel and the palace within it. We know, especially from the German excavations at Senjirli, that in the ancient royal towns of Syria the citadel was regularly situated at the north end. The remainder of the mound, which must cover the town itself, is about 180 by 290 meters. The mound as a whole is some 450 meters long and 260 meters wide; it is, therefore, considerably larger than Megiddo.

THE SYRIAN-HITTITE EXPEDITION

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In the summer of 1931 Mr. Richard A. Martin was dispatched to take possession of the site, begin the construction of our expedition house (Fig. 156), and, if possible, undertake also a preliminary survey for the production of the grid map prerequisite to the excavations.

In February, 1932, M. Claude Prost, a member of the staff of the Syrian Department of Antiquities, was appointed field director of the expedition, the Syrian government and the French Department of Antiquities having very kindly consented to share his services with the Oriental Institute. Actual excavation at Chatal Hüyük did not begin until November 1, 1932. Its clearance is therefore not yet sufficiently advanced to include in this survey any report on the evidence which is to be expected.

CHAPTER XIV

THE PERSIAN EXPEDITION

Field research in the Near East since the World War has brought out with increasing clearness the fundamental importance of the Highland peoples. The interrelations of the civilizations which developed throughout the length of the Highland Zone are becoming more and more clearly discernible on the one hand; at the same time there is steadily increasing evidence of the influence of the Highland peoples on the Fertile Crescent and the Flatlands of the south. To this latter aspect of the Highland Zone we shall refer again in discussing the expeditions of the Institute in the Fertile Crescent. For the moment, however, it is the interrelationships of the Highland cultures among themselves with which we are concerned.

The native deposits of metallic ores in the western half of the Highland Zone made it a very important center from which culture influences radiated not alone into the Mediterranean region and the Fertile Crescent, but also eastward. Though the prevailing direction of the mountain ranges in the Highland Zone is east and west, veering southeastward, to be sure, toward Persia, there is nevertheless a very serious geographical barrier between the basin of the Euphrates and that of the Kızıl Irmak. Notwithstanding this barrier, the east-west diffusion of culture within the Highland Zone is now a demonstrable fact. Eastern culture influences, such as the remarkable polychrome decorative designs (cf. Fig. 158) which arose in Neolithic times at the east end of the Highland Zone, unquestionably drifted westward. Under these circumstances it was fundamentally important that, after establishing a research center at the west end of the Highland Zone, the Institute should likewise inaugurate field researches at its eastern end. Furthermore, the Indo-European migration broke through the Highland Zone more effectively in the east than at any other point, for it was here that this migration was most impressively manifested in the rise of the

Persian Empire. Obviously, the region of supreme importance was Persia. We have already discussed the beginning of the Persian Expedition (pp. 89-91).

Archeological investigations in Persia are of relatively recent development. The site of Persepolis, with the impressive ruins of its palaces, was identified by Pietro della Valle when he visited the place in 1620. But actual excavations in Persia did not begin until the end of the nineteenth century. Not long before 1900 the French government received a permanent concession for excavations in that country to the exclusion of all other nations. This concession not only granted to the French the exclusive right to excavate, but included *title to all the antiquities in Persia*. In the exercise of this monopoly, the Délégation en Perse was dispatched to Persia under the leadership of Jacques de Morgan. This expedition carried on intensive excavations at Susa only. Elsewhere it conducted mere surface investigations, as on the southeastern shores of the Caspian Sea; it made a few observations also in the region of ancient Rhages near Teheran. When its leader, De Morgan, retired in 1911, the Délégation was broken up into various small missions besides the main one at Susa. One mission operated until 1913 in Hamadan, but no report of its work has ever been published; another worked for a short time at Rishahr near Bushire on the Persian Gulf. It was not until 1929 that this monopoly was terminated. Thereupon the Forschungsgemeinschaft der deutschen Wissenschaft undertook some brief excavations under the leadership of Herzfeld at Pasargadae and on the Kuh-i-Khwadja, a mountain in the Hamun Lake in Seistan. That was all that had been done in field research in Persia when the Oriental Institute received its concession at Persepolis (see p. 90). Later two Philadelphia museums jointly dispatched Dr. Frederick R. Wulsin to work at Turang Tepe in the vicinity of Astarabad, and likewise Dr. Erich F. Schmidt, formerly with the Oriental Institute, who excavated at Damghan (ancient Hekatompylos) about 250 miles east of Teheran. The Louvre maintained a short campaign under the leadership of Contenau in the Tepe Giyan near Nihawand. For a long time, of course, oriental antiquity dealers have been carrying on illicit excavations, and they are continuing to do so.

During the thirty years of exclusive French control of archeological work in Persia their excavations at Susa revealed a very important archaic culture in the lower levels of the Susa mound, but their researches as a whole did not disclose the long and slow development of civilization that lies between the earliest culture of Susa and the Persian Empire. It is now quite clear that the hills and valleys of Persia are full of surviving evidences of this development, and the task of recovering the evidence and interpreting it is the responsibility of Western archeological science.

At this writing (January, 1933) the field director of our Persian Expedition, Professor Ernst E. Herzfeld, and his associates, Friedrich Krefter and Alexander Langsdorff, are justified in contemplating with much satisfaction the results already achieved at Persepolis. Herzfeld has conducted a brilliantly successful campaign. It is impossible, within the limits of this survey, to do more than include brief references to the outstanding "high lights." The earliest Babylonian records long ago made it quite clear that there was at the east end of the Highland Zone a very early civilized development, the beginnings of which obviously reached far back into prehistoric ages. This conclusion from Babylonian evidence has been amply confirmed by researches in the Highland Zone itself, notably, as already mentioned, by the excavations of the French at Susa. It was anticipated as a matter of course, therefore, that the Persian Expedition would find evidences of prehistoric man.

These expectations were not disappointed. In the vicinity of Persepolis Herzfeld discovered a small mound—somewhat over 600 feet long and less than half as wide, rising only 10 or 12 feet above the plain—in which a few soundings disclosed Stone Age materials. As soon as possible after the Institute had begun work at Persepolis, this mound was attacked and proved to contain the most extraordinary evidence. The clearances laid bare a Stone Age village in a state of preservation surpassing that of any such discovery ever made heretofore (Fig. 157). The walls of the adobe houses are preserved in places to a height of 6 or 7 feet. A narrow, straggling street or alley extends the length of the little settlement, and a modern observer walking down this street can look over into the houses or through their open doorways and windows and see traces of



FIG. 157.—GENERAL VIEW OF A NEOLITHIC VILLAGE OF ABOUT 4000 B.C. EXCAVATED NEAR PERSEPOLIS

mural decorations in red ocher water color. Standing about on the floors were household utensils of pottery, fireplaces with burned clay firedogs still in position, and pottery vessels still containing remains of food, especially the bones of probably domesticated animals. In some of the pottery dishes lay the flint knives with which the dwellers in these houses had last eaten. The most remarkable revelation was the decorative designs with which the pottery vessels were adorned. These polychrome motives, showing an extraor-



FIG. 158.—A PAINTED POTTERY VASE FROM THE NEOLITHIC VILLAGE NEAR PERSEPOLIS. SIDE AND BOTTOM VIEWS

dinary range of observation in the natural world, are a disclosure of prehistoric aesthetic ability which was totally unexpected.

Of the art revealed in this decorated pottery (Fig. 158) Herzfeld says:

The wealth of forms and decorative motives reveals more plainly than anything else the high level of this culture and its far-reaching relations. It is evident that this art is the predecessor of the early Aeneolithic of Susa I, which has heretofore been the oldest known painted pottery of the Near Orient with the [possible] exception of some crude and artistically insignificant Stone Age potsherds at Babylon. The finds that have come out of this Stone Age mound near Persepolis surpass in both age and beauty all later products.

Professor Herzfeld has copied the most important of the decorative designs on this pottery in water-color sketches, of which the Institute has already received forty-two. It is expected that in the publication of this Stone Age village this remarkable group of decorative motives will be reproduced in color plates. Regarding their date Herzfeld calls attention to the fact that before the oldest historical strata of the early dynastic period in Mesopotamian-Persian territory come *five* clearly distinguished stages, the earliest of which is represented by the newly discovered ware. For it precedes Susa I, which in turn is followed by three purely Copper Age periods—"al-Ubaid," "Uruk," and "Jemdet Nasr." Not until after the Jemdet Nasr period did the hardening of copper by alloying it with arsenic or lead begin. This took place around 3000 B.C. Our Stone Age village, then, belonging to the fifth preceding period, probably dates from about 4000 B.C.

Between the Neolithic (Stone Age) civilization found here and the imperial age of Persia, 3,500 years later, there was a long and highly important cultural development of which we know almost nothing. That the civilization of Cyrus' day should have burst forth into imperial splendor almost overnight is, of course, unthinkable. It must therefore be one of the great responsibilities of modern research in Persia to endeavor to find and interpret the evidences which this long development from prehistoric times to the rise of the Persian Empire must have left behind.

Great bodies of the original evidences which will reveal this splendid development from the Stone Age to Cyrus are awaiting investigation within the limits of our concession; for the area of the concession as now extended (see p. 320) includes a whole series of sites. "Many of these," says Herzfeld, "are small mounds easy to excavate, and they all possess the advantage of not having been overlaid with later strata." These mounds belong to the early and later stages of the Copper and Bronze ages. Since the remains of Istakhr (see pp. 320-21) disclose a cultural development reaching from 2000 B.C. to about A.D. 1000, a period of some three thousand years, the investigation of these various sites together will furnish a compact picture of the cultural development of Persia from the earliest times to the beginning of the Moslem age.

The concession also includes the well-known royal tombs at Naksh-i-Rüstum (Fig. 159). Herzfeld calls attention to the fact that an interesting problem in the history of Persian religion is created by the obvious purpose of these tombs—a problem of not a little modern interest. He writes:

It is quite clear that such tombs demonstrate the practice of *interment* by the followers of Zoroaster, whereas his modern disciples, who now form a prosperous community, the Parsees of Bombay, expose their dead in the well known "towers of silence." This custom can now be traced in the vicinity of Persepolis back almost into the Achaemenian age; but the Achaemenians themselves, as we learn from their carefully excavated cliff tombs and the simple rock tombs of private persons in the vicinity, did not follow the practice of exposing the bodies of their dead. The first Zoroastrians were still unacquainted with the custom; it must therefore have been introduced afterward, presumably from the east. This is a matter deserving the attention of the Parsees, as there is a movement among them for abolition of the "towers of silence."

The vicinity of Persepolis is so rich in ancient monuments that aside from the main site the expedition is now excavating two individual structures. One is a massive stone masonry tomb of Old Persian date (Fig. 160), the other a temple belonging immediately after the conquest by Alexander (see Fig. 170) and therefore of importance for our knowledge of Hellenistic civilization in the Near East. Unfortunately, considerations of space make it impossible to include here any report on these two buildings.

On the great palace terrace of Persepolis itself we have, of course, the full noonday of Persian civilized development, forming a noble heritage which the modern world is only now beginning to rediscover. The relation of Persepolis to the general framework of Persian civilization may perhaps be clearer if we say that it formed a kind of Versailles, near which we must of course expect to find the Paris of the Persian Empire. Local explorations made it highly probable that the royal city itself must be covered by the low mound of Istakhr at a distance of only a few kilometers from Persepolis. We realized that our responsibility at Persepolis could not possibly be confined to an investigation of the great group of palaces, but must include also the related evidences which surround

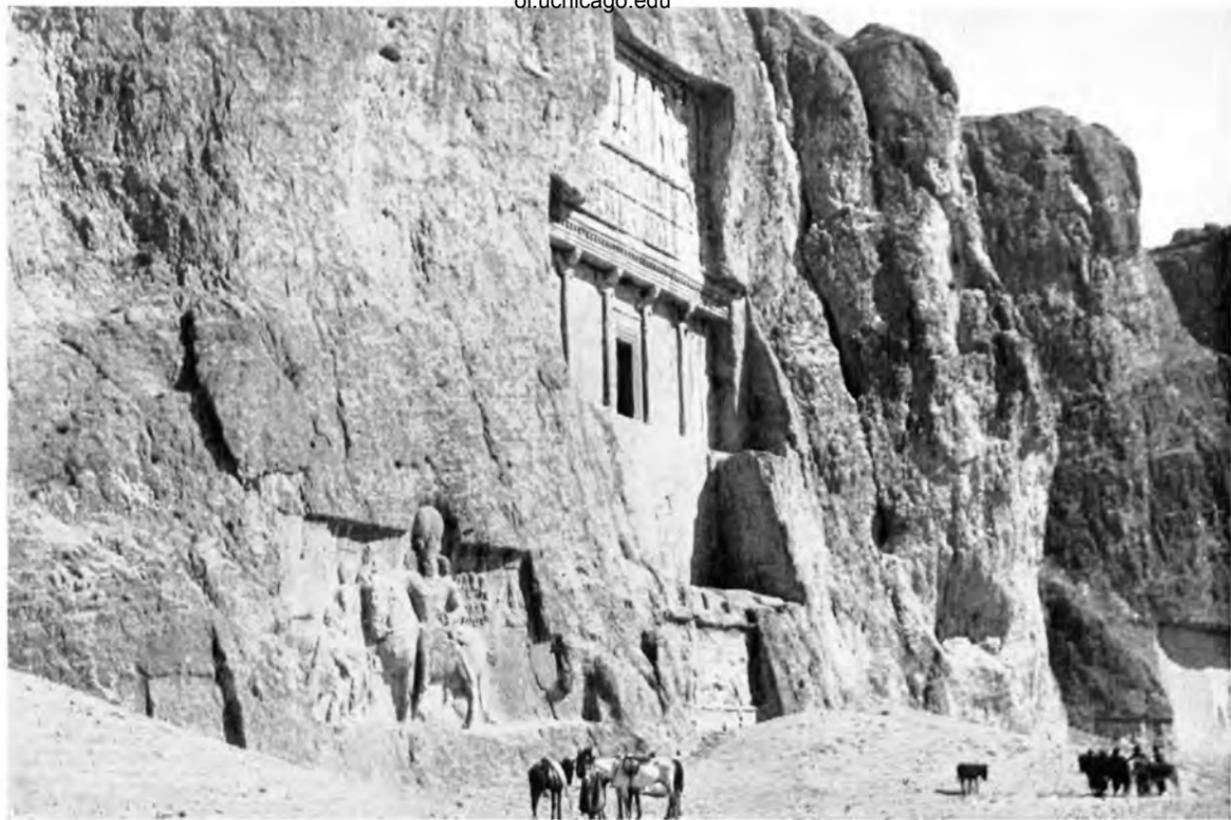


FIG. 159.—THE CLIFF TOMB OF DARIUS THE GREAT AT NAKSH-I-RUSTUM NEAR PERSEPOLIS



FIG. 160.—AN OLD PERSIAN TOMB OF MASSIVE MASONRY



FIG. 161.—BEGINNING THE EXCAVATIONS AT ISTAKHR

Immediately below the surface here are ruins of a Moslem mosque of about A.D. 1000, containing architectural fragments (columns and bases) from Old Persian buildings of the same age as the palaces at Persepolis.

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the place and which fuse together into a great body of cultural remains. Our Persepolis concession was therefore extended to include a circle with a radius of 10 kilometers about Persepolis as a center. This has given the Institute a circle nearly 13 miles across, in which to carry on investigations of the neighboring related evidence.



FIG. 162.—AN EXCAVATED SALIENCE OF THE MEDIEVAL CITY WALL AT ISTAKHR
The wall shows four rows of shooting-slots for the defending force

It was not until the autumn of 1932 that Professor Herzfeld was able to extend his researches to include some preliminary investigations at the mound of Istakhr. This mound measures about 1 kilometer, or over half a mile, on each side. After discussing the preliminary procedure by letter with the writer, Herzfeld excavated three of what we have called at Alishar "test plots." These have resulted in epoch-making revelations. The upper strata (Figs. 161-62), out of which building-remains such as columns and piers of masonry were already projecting above the modern surface before the exca-

vations began, have proved to contain two mosques of the Moslem period, about A.D. 1000. Both these and structures of Arsacid and Sassanian origin below the mosques contained building materials of *Old Persian origin* which had been taken from Old Persian buildings of the days of such great emperors as Darius and Xerxes. The discovery of these Old Persian building materials in the later structures at or near the surface is very encouraging, for they make it evident that Istakhr was indeed the Old Persian royal city of which Persepolis was the palace suburb. They make it highly probable also that a city of much earlier date than the Persian Empire—a city whose wreckage would reveal to us the civilization of Persia in times far antedating Cyrus—may be found in lower strata, either directly under the imperial buildings or elsewhere in the neighborhood.

The task at Persepolis itself (Fig. 163; cf. Fig. 35) includes three important parts: first, the clearance of the ruined palaces still rising above ground level on the vast terrace; second, the preservation of these remains; and third, the complete reconstruction of one of the palaces as a model of the Persian art of building in the Achaemenian period. These different stages of the work could all be undertaken at the same time. In view of the plan for all-the-year-round operations, the expedition pressingly needed living-quarters and workrooms. It was decided to supply these by the reconstruction of Palace *E* (Figs. 164-65).

During the months from April to July, 1931, the ancient building was entirely excavated and disclosed itself as a harem palace with six apartments in the rear, all alike; a magnificent royal apartment in front, with an imposing colonnaded hall; and a portico with eight columns. In contrast with the situation elsewhere on the palace terrace, this building clearly displayed two periods. The first building had been completely razed; and the second building, with its floor level about 25 centimeters higher, had been constructed on the old site. The inscriptions definitely reveal that the earlier building, now vanished, was erected by Darius as his harem palace, while the later building, much larger in ground plan, was the harem palace of his son, Xerxes. The walls of Xerxes' building were still standing to a height of 8 or 9 feet. These walls were restored, a modern roof was constructed, and in the winter of 1931/32 the rear rooms, once

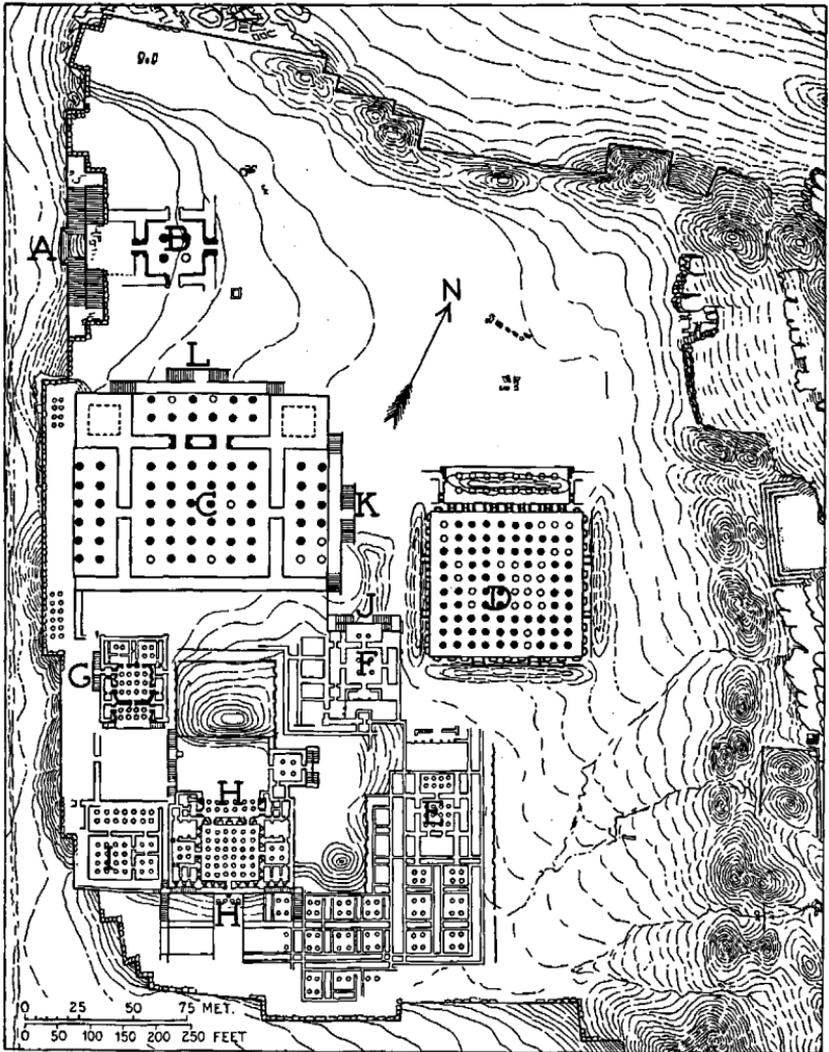


FIG. 163

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the apartments of the six favorite ladies of Xerxes, were so far finished that the expedition staff was able to move in.

In May, 1932, the restoration of the colonnaded hall of the royal apartment in front was begun. Such portions of the building as were of stone have been fairly well preserved. Heavy hoisting machinery was sent out to the expedition so that it could handle these large stone blocks; and with great skill Herr Krefter, the architect, has been able to hoist the formidable lintels to their old positions on top of the doorposts (Fig. 166). Gradually the royal hall has begun to take on its ancient aspect of impressiveness and splendor. Its twelve columns have been restored in wood, as have the eight columns of the portico in front of it.

The colonnaded hall of the royal apartment is being used as a museum where the sculptures and smaller monuments discovered in the course of the excavations are being set up as the nucleus of a national museum of Persian art, the gift of the Oriental Institute to the people of Persia. When His Imperial Majesty, the Shah, visited the Persepolis excavations early in November, 1932 (Fig. 167), he found these great monuments of his royal ancestors the object of devoted and conscientious efforts at preservation such as Persia had never seen before, and he expressed himself as exceedingly gratified with what he saw. On this occasion there was an

FIG. 163.—PLAN OF THE GREAT PALACE TERRACE AT PERSEPOLIS

- A. Grand stairway entrance to the palace terrace
- B. Gate of Xerxes
- C. Apadana, royal audience hall of Xerxes
- D. Another apadana, the Hall of One Hundred Columns
- E. Harem palace of Darius and Xerxes, now restored to serve as a museum and to house the Oriental Institute's Persian Expedition
- F. Entrance gate of palace area
- G. *Tachara*, winter palace of Darius
- H. *Hadish*, palace of Xerxes
- I. Palace of Artaxerxes III
- J. Grand stairway to entrance gate of palace area, discovered in November, 1932
- K. Grand stairway to royal audience hall of Xerxes, discovered in November, 1932
- L. Grand stairway to royal audience hall of Xerxes, long known

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exchange of friendly cablegrams between His Imperial Majesty and the Oriental Institute headquarters in Chicago.

As the clearance of the remainder of the terrace went on, differences in levels of the palace courts and halls were disclosed (cf. Fig. 163). Thus some understanding of the terrace as a whole, an



FIG. 164.—GENERAL VIEW OF THE HAREM PALACE OF DARIUS AND XERXES AT PERSEPOLIS (E IN FIG. 163)

The stately royal apartment with its enormous stone doorways, at the front (right end) of the building, had not yet been excavated when this photograph was taken. The façade (at extreme right) was built up between two enormous stone piers recognizable by their tallness. The harem apartments, six in number, occupy the rear (left end) of the building. These apartments have been restored to their original height and roofed for occupancy by the expedition during the excavation of Persepolis. While the restoration was in progress the expedition lived in the tents seen in the background.

area of 1,000 by over 1,600 feet, has gradually emerged. In this work it proved necessary not merely to clear away the *accumulations* of rubbish but also in places to *fill up* deep hollows made by over two thousand years of surface erosion. During the past summer it has gradually become possible to investigate the individual palaces.

Like other architects throughout the Near East, the Persian builders employed large masses of sun-dried brick masonry. While

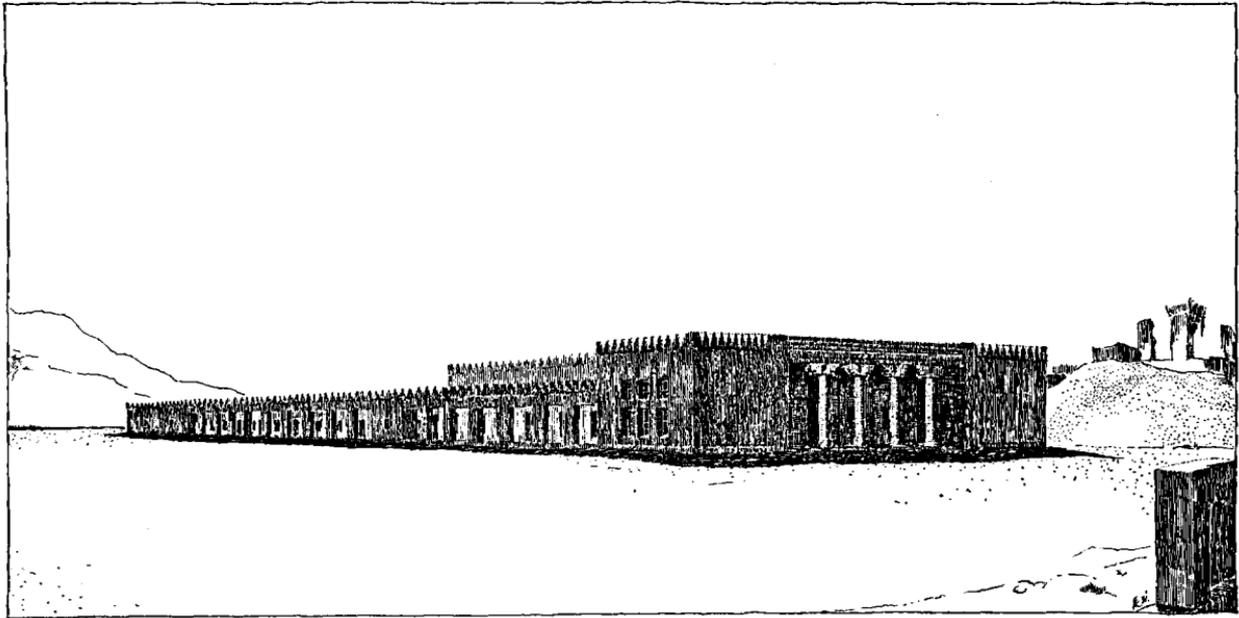


FIG. 165.—THE HAREM PALACE OF DARIUS AND XERXES RESTORED AS MUSEUM (RIGHT END) AND EXPEDITION QUARTERS (LEFT END)

colonnades, doorposts, lintels, architraves, and the like—in fact, all surfaces where sculptural embellishment was necessary—were constructed of stone, the extensive masses of connecting walls were of sun-dried brick. These have now very largely disappeared, melted



FIG. 166.—REPLACING A LARGE STONE LINTEL AT PERSEPOLIS

down like loaf sugar by the rains of thousands of years. The resulting rubbish has often been carried far from its original position. The failure to recognize the large part which sun-dried brick played in the architecture of Persepolis misled all the earlier archeologists; the architectural reconstructions in such works as the volumes of Perrot and Chipiez are for this reason based on a complete misun-

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derstanding of the character of Persian architecture. That the rubbish of sun-dried brick is a very valuable protection for ancient



FIG. 167.—HIS IMPERIAL MAJESTY THE SHAH VISITING PERSEPOLIS

His Majesty the Shah is the second figure from the left. Facing him (in center of foreground) is Professor Herzfeld, field director of the Oriental Institute expedition. The Shah is just uttering the words: "You are doing a work of civilization here, and I thank you."

sculpture is shown by the small stairway in Figure 168. At Khorsabad our great bull lay for more than two thousand years protected by a mass of earth—disintegrated sun-dried brick.

The rubbish at Persepolis did not appear to be very deep. As already noted, it had in places disappeared completely, carried



FIG. 168.—SMALL STAIRWAY DISCOVERED AT PERSEPOLIS IN THE SUMMER OF 1932

away by the drainage. It was not supposed to be deep enough to cover large architectural remains or great bodies of sculpture. Nevertheless, quite contrary to expectation, between the two great audience halls, called in Persian "apadanas," there lay in some places no less than 26 feet of rubbish. This discovery was made as a result of Herzfeld's attempt to solve a problem which had early confronted him: How were the different levels of the two great audience halls and the palace group connected? Having failed to find any stairway on the south side of the Hall of One Hundred Columns (*D* in Fig. 163), Herzfeld turned to the area between buildings *F* and *D* and found to his great surprise the enormous depth of rubbish to which we have just referred. As he rounded the front corner of *F* he found at *ℱ* a magnificent monumental stairway with a front of nearly 100 feet. The stairway was double, so that processions could divide and ascend in opposite directions to two landings at opposite ends, then turn and, after a second ascent, meet again on a center landing at the top. Both the whole of the breast and also the fronts and backs of the monumental balustrades were richly covered with relief sculptures which, if stretched out in a single line, would measure altogether 325 feet in length. Of the content and character of these sculptures we shall speak later.

With this new and important datum in hand, it became obvious to Herzfeld that there must be some connection between this new monumental stairway (*ℱ*), which led to the palaces, and the neighboring apadana (*C*) immediately to the north, one corner of which was directly in front of the west end of *ℱ*. Herzfeld therefore quickly made a test clearance on the east side of the great apadana (*C*). There he discovered at once another and far larger grand stairway (*K*), about 240 feet long, flanking the east front of the great building and corresponding to a similar stairway, long since known, on its north side. The new monumental stairway (Fig. 169) was developed differently from the smaller one which he had just found at *ℱ*. The stairs were in two pairs, both rising to landings on a level with the pavement of the apadana. Here again the breast of the structure and both sides of the balustrades were covered with magnificent relief sculptures altogether 650 feet long. Only a few days' work, therefore, devoted to the finding of these two stairways,



FIG. 169.—PART OF THE GRAND STAIRWAY (*K*) AT THE EASTERN ENTRANCE OF THE AUDIENCE HALL (APADANA) OF XERXES, DISCOVERED IN NOVEMBER, 1932

has enormously increased the volume of known Old Persian sculpture.

The content of these sculptures is in general the same on both stairways. We have on the one hand an imposing array of Persian and Median spectators, including lines of imperial guards drawn up as they were undoubtedly accustomed to stand at attention in these great palaces of the Persian emperors. Opposed to and balancing this assembly of spectators, approach the envoys and tribute-bearers of the subject nations. On the larger of the two stairways these nations are twenty-two in number. On both stairways they are accompanied by extensive inscriptions, of course glorifying the power and majesty of the Persian emperors.

The perfect preservation of these newly discovered sculptures is very surprising. They are as fresh and uninjured as on the day when the sculptor's chisel was lifted for the last time. The rubbish of sun-dried brick, to which reference has already been made, has protected them for some twenty-five hundred years. Moreover, incrustations of salts, such as so often crystallize out on the surface of ancient sculptures and destroy the original finish, are in this case entirely lacking. Indeed, in one quarter of the palace area the excavation has disclosed the lower part of a group of figures on which the ancient colors are still perfectly preserved. They reveal to us for the first time the character of the coloring of ancient Persian sculpture. It is interesting to note that the dominating tone is a deep red, approaching scarlet.

In character these sculptures are among the finest works of Old Persian art ever discovered. They have been wrought with unparalleled beauty and refinement of detail. The palace guards of Darius and Xerxes are depicted with great magnificence—the horsemen, the charioteers, and the footmen. In the representation of a chariot the axle can be seen projecting through the hole in the center of the hub. There is a hole in the end of the axle outside the hub, and the sculptor has represented a bronze nail thrust through this hole in the axle to keep the wheel from coming off. The head of this nail is not as large as a postage stamp, but it is exquisitely wrought as the upper part of a female figure, every detail of which is visible. Similarly, the bows and short swords of the footmen are

wrought with delightful detail. The tips of the scabbards of the short swords bear trefoil-shaped ornaments each containing a figure of a horse, different in the case of each soldier.



FIG. 170.—A NEW INSCRIPTION OF XERXES FROM PERSEPOLIS
Lines 1-24 (from a squeeze)

In the course of the excavations on the terrace an enormous system of subterranean drainage channels was discovered, extending for several kilometers under the palaces. They are cut for the most

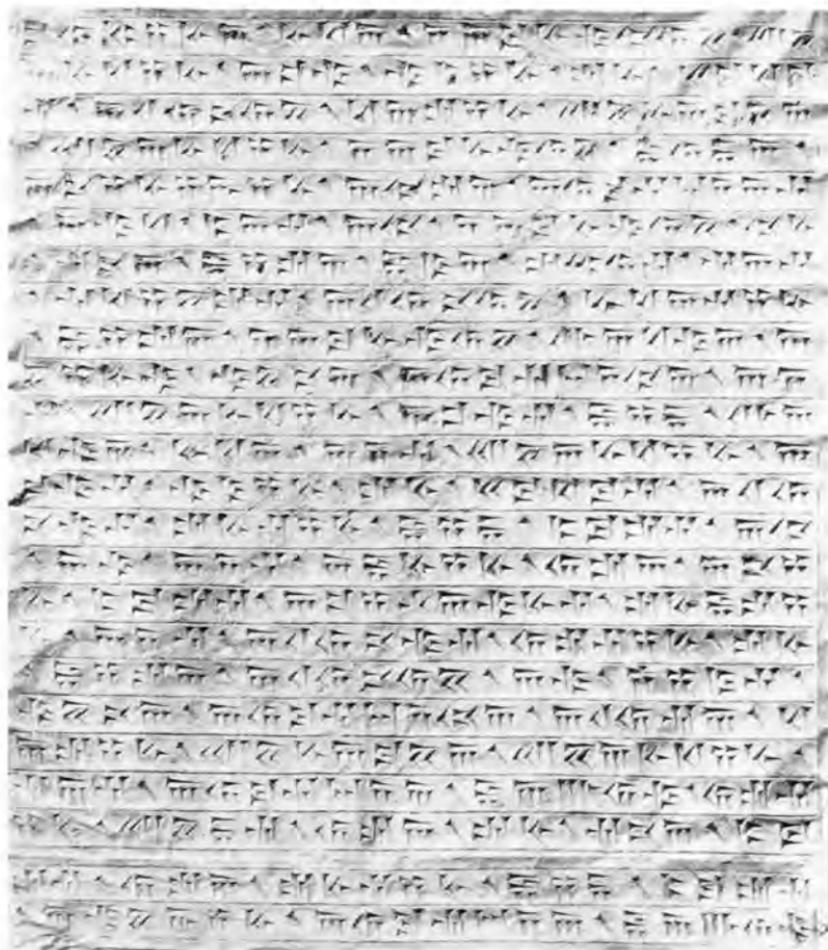


FIG. 171.—A NEW INSCRIPTION OF XERXES FROM PERSEPOLIS
Lines 25-48 (from a squeeze)

part in solid rock and are so high that it is possible to walk through them. Herzfeld reports the interesting fact that the positions of their vertical down-spouts exactly fit a prearranged system of openings in the palace architecture. As the places of these openings were fixed before the palaces were erected, it is clear that the enormous complex of buildings was laid out and planned from the beginning as one coherent unit, begun by Darius early in his reign and completed in the course of Xerxes' reign. Nowhere else in the ancient world is there any such majestically impressive group of buildings planned by the architect from the beginning as one coherent and self-contained conception, so that every part is developed in relation to all the others and the finished work forms a harmonious whole.

The outstanding problems at Persepolis are both historical and archeological. Referring to these, Herzfeld writes:

Our historical knowledge of the period, if we disregard the Greek reports on the Persian wars, is derived from very scanty sources. Every tiny inscription is for us therefore a significant document for widening and deepening our knowledge of Old Persian history. Several new inscriptions have been found which reveal chiefly philological information and are therefore contributions of linguistic interest; but a newly discovered inscription on the cliff tomb of Artaxerxes III contains a complete list of the nations and peoples depicted in relief on the front of the tomb and belongs therefore to the class of historical inscriptions. The great foundation record of Xerxes (Figs. 170-71), commemorating the erection of the harem palace, is of special importance, for its content reveals the irregularity of the royal succession from Darius to Xerxes and the abdication of Darius.¹ In view of the fact that such foundation records have now been found at Hamadan, in Susa, and in Persepolis, it is evident that the deposit of such building records was a general custom; and we may now with certainty expect to find such documents under all the buildings of the palace terrace. This fact justifies the hope that the excavations will be of great value in clearing up the purely historical problems connected with Persepolis.²

The archeological problem of Persepolis is perhaps best illuminated by

¹ This inscription has been published by Herzfeld in the Oriental Institute's "Studies in Ancient Oriental Civilization," No. 5 (Chicago, 1932).

² Thus far there has not been time to study the body of new inscriptions disclosed on the two newly discovered stairways.



FIG. 172.—RUINS OF A TEMPLE BUILT BY A *Fratadara* OR LOCAL PRINCE OF THE PERIOD FOLLOWING ALEXANDER'S CONQUEST
The Persepolis palace terrace is seen in the background

the juxtaposition of this great architectural group with the acropolis in Athens, which is but a few decades younger and at the same time is the only other group of buildings comparable in beauty with Persepolis. The age is that historic moment about 500 B.C. when the cultural ascendancy of Greece over Asia was beginning. One therefore often hears the statement that the art of Persepolis was developed under Greek influence. This conclusion is superficial and untrue. Every day the work of the Persepolis expedition demonstrates that the various techniques employed here were derived from many lands throughout the ancient Orient: from Media, Armenia, Hittite Asia Minor, Assyria, and Elam. That the artistic forms and the iconographic and decorative types had migrated from the same lands is evident. At the same time these elements are so transformed that they have a purer, really Old Persian character; yet they often betray, as evidences of age and exhaustion, atavistic features from the time of their earliest origin. Placed over against Persepolis, the acropolis of Athens appears as the symbol of a new age to which the future belongs. Persepolis, on the other hand, is the last and highest synthesis of the achievements of the ancient Orient. It marks an absolute termination, and in the burning of Persepolis under Alexander the Great the ancient Orient went up in flames.

Nevertheless, the art of Persia at its culmination left an imperishable mark on the arts of India and China.

The torch of Alexander, that left the great palaces of Persepolis blackened with smoke and flame, was like a new light shedding the brightness of Greek genius far across inner Asia, where it is still visible in Indian and Chinese art. In spite of Alexander's destruction of Persepolis, the following period, commonly called the Hellenistic age, is represented there in a temple of the goddess Anahita, dedicated by a local prince (*fratadara*). Its ruins (Fig. 172) were excavated in the summer of 1932. The temple lies just below the terrace, looking up at the palaces whose ashes had but recently ceased to glow when it was built. It belongs to the new age of Greek domination in the ancient Near East.

CHAPTER XV

THE IRAQ EXPEDITION: BABYLONIAN SECTION

We have already observed how the Hittite physiognomy prevailing in Palestine clearly demonstrates migration of the Hittite population from the neighboring Highland Zone into the west end of the Fertile Crescent—migration which without doubt reaches back into prehistoric times. The same drift of western Highlanders continued down into historic times, and we have seen how it resulted in the establishment of a group of Hittite kingdoms in North Syria in the northwest sector of the Fertile Crescent. Closely analogous to this process in the west and northwest was the migration of the peoples of the eastern Highland Zone, who descended in prehistoric times into the lowlands at the east end of the Fertile Crescent. The importance of the Kermanshah road, by which such migrations descended from the mountains, has been suggested on page 83. The fact has long been established that the Sumerian population of archaic Babylonia was a people who had originally inhabited some region at the east end of the Highland Zone. With the prehistoric cultural development of the Sumerians after they had settled in the Fertile Crescent, early Babylonia emerges upon our historical horizon. As far as is now discernible, this Sumerian migration was the first of a series of similar movements of the Highlanders all around the Fertile Crescent. In view of the fact that among these movements the earliest known Indo-European migrations are distinguishable, it is extremely probable that we can generalize to the effect that at some periods the drift of the Highland populations toward the Fertile Crescent was due to the pressure of Indo-European migration from behind. Of fundamental importance in the history of mankind are the appearance of the Medes and Persians in the northern and eastern Highlands and their overflow upon the Fertile Crescent, resulting eventually in the establishment of the Persian Empire.

The movement of the Hebrew nomads into Palestine, followed by their transformation from wandering shepherds into settled townsmen, is a typical illustration of another important series of migrations—those from *inside* of its half-circle—to which the Fertile Crescent was exposed. In thus invading the Fertile Crescent the nomads of the south came into collision with the Highlanders of the north. It was such a movement as this, focusing on the still small and obscure Euphrates town of Babylon in the latter part of the third millennium B.C., which eventually raised that famous city to its impressive position in world history.

In the twenty-second century B.C. the mixed culture, which we may now call Sumero-Akkadian civilization, was still maintained under the last of the kings of Sumer and Akkad; but the old Sumerian cities, with their mixed population of Sumerians and Akkadians, were declining. Their final fall was due not only to wars among the city-kingdoms themselves but also to foreign invasions which broke through the frontier defenses in both east and west at the same time. In the east the Elamites from the neighboring Highland Zone seized the Sumerian cities, captured the last king of Ur, and plundered the royal tombs of the city. In the west a new tribe of Semites, called Amorites, began an invasion of Akkad. Between these two invasions the old Sumero-Akkadian power was slowly but completely crushed.

In the time of the kings of Sumer and Akkad the Amorites began to descend the Euphrates, just as the Semitic Akkadians had done long before under Sargon. In course of time they seized the little town of Babylon, which was then still an obscure village on the Euphrates. These Amorite chiefs held Babylon for three hundred years (about 2049–1749 B.C.)[†] and made the city finally such an outstanding center of power and civilization that it gave its name to the old Plain of Shinar, which we may thenceforth properly call Babylonia.

The earlier Amorite kings of Babylon were not able at once to take possession of all Sumer and Akkad; a struggle against the Elamites coming in from the eastern Highlands went on for a long

[†] These and the following dates are derived from recent, still unpublished studies by Professor A. T. Olmstead, of the Oriental Institute.

time without a decisive victory. Following a century of such warfare, about 1947 B.C. there came to the throne a king named Hammurabi, the sixth in the Amorite line. Hammurabi at once took up with great vigor the war against the invading Elamites. For over thirty years he fought them, before he was able to drive them back into the eastern mountains from which they had come. Thus in the twentieth century B.C. Hammurabi made his city of Babylon for the first time supreme throughout the ancient Babylonian plain. This long war is an instructive example of the age-long struggle between the mountaineers and the plainsmen for possession of the Fertile Crescent. This time the Semitic plainsmen triumphed.

Almost no investigations have been carried on in the long stretch of territory between the Tigris and the mountains of later Media and Persia (see map at end), a region which was for centuries a kind of "no man's land" where the kings of the Fertile Crescent were often unable to hold their ground against their rivals, the Elamites from the Highlands above. It is sometimes the case that more information about a country is obtainable from monuments discovered outside of it than from scanty records available within its own limits. It may be fairly said that more has been learned of Palestine from monuments discovered outside its borders than from any records excavated within the Holy Land itself. Although this is of course not true of Babylonia, nevertheless the most important single Babylonian monument ever discovered, the shaft bearing the laws of Hammurabi, was found not in Babylonia but in ancient Elam, in the territory of later Persia. It seemed to the writer, therefore, that the untouched buried cities in the debatable ground between the Highlands and the eastern end of the Fertile Crescent should be a very fruitful source of evidence concerning the development of civilization, which was so often dependent upon the course of conquest and the action and reaction of cultural influences passing both ways between the Fertile Crescent and the Highland Zone.

At this juncture Dr. Chiera reported that a group of mounds east of Baghdad was being plundered by natives. The results of their illicit digging were being offered for sale by the antiquity dealers of Baghdad. After Dr. Chiera returned to Chicago to take charge of the Assyrian Dictionary (see chap. xvii) and responsibility

for the Iraq Expedition was taken over by Dr. Frankfort, the writer requested the latter to look into this whole situation on the east of the Tigris. The result was that the Oriental Institute received from the Iraq government a concession to four sites, all lying within a circle roughly some 20 miles in diameter, east of the Diyala River (Fig. 173). The northernmost of these cities, modern Tell Asmar (see Fig. 33), is only about 25 miles from Baghdad as the crow flies, although the present automobile road via the bridge across the Diyala involves a drive of some 50 miles between Baghdad and Tell Asmar. The other three sites, lying close together, are at the present day called Khafaje, Ishchali, and Abu Khazaf. Khafaje lies directly on the Diyala; Tell Asmar is some 12 miles from that river.

At Tell Asmar, before the work began, burned brick fragments bearing the names of early kings could be picked up on the surface, and a noticeable hole in the ground (Fig. 174), due to the collapse of a brick vault, gave access to a chamber immediately below, where bricks stamped with royal names were plentiful. The region is not an easy one in which to work. There is no water at Tell Asmar, and the effort to provide well water disclosed the fact that all such water is so brackish that it cannot be used for household purposes. A regular water supply, therefore, both for the personnel of the staff and for the gangs of native labor, numbering at times several hundred, depends upon automobile tank transportation. Even the shelters for the workmen required some attention and some supplies at the hands of the expedition.

Our two young architects, Mr. Lloyd and Mr. Loud, prepared plans for a considerable building to serve as Institute headquarters in Babylonia. This building (Fig. 175) was completed during the summer of 1930 by a Baghdad contractor under the supervision of Mr. D. B. Abulafia, a civil engineer from Jerusalem. The distribution of space around its three courts shows the arrangement which

FIG. 173.—MAP SHOWING THE CONCESSION OF THE ORIENTAL INSTITUTE EAST OF THE TIGRIS

The four ancient sites are Ishchali, Abu Khazaf, Khafaje, and Tell Asmar. Of these the last is the only one of which the ancient name (Eshnunna) is known.

best meets the fundamental needs of expedition headquarters, as gradually developed by the experience of the Institute (Fig. 176).

It was not to be expected that the staff of the Iraq Expedition could carry on intensive excavation at all four of the mounds in-



FIG. 174.—A GLIMPSE OF TELL ASMAR BEFORE EXCAVATION BEGAN

cluded in the new concession, especially in view of the fact that the excavation of Khorsabad on the upper Tigris had already been



FIG. 175.—THE HEADQUARTERS OF THE IRAQ EXPEDITION OF THE ORIENTAL INSTITUTE AT TELL ASMAR

going on for two seasons and was necessarily to be continued.² It was therefore decided that actual excavation should begin at two of the four sites in the concession—namely, Tell Asmar and Khafa-

² The members of the Iraq Expedition staff as a whole have been and are the following:

Henri Frankfort, field director, 1929—

Pinhas Delougaz, field assistant, 1929-31; director of excavations at Khafaje, 1931—

Gordon Loud, architectural assistant, 1929—

H. D. Darby, architectural assistant, 1930—

Thorkild Jacobsen, epigrapher, 1930—

G. Rachel Levy, recorder, 1930—

Seton H. F. Lloyd, architect and surveyor, 1930—

Conrad Preusser, director of excavations at Khafaje, 1930/31

H. S. Braun, field assistant, 1931—

N. C. Debevoise, archeologist, 1931—

Mrs. Rigmor Jacobsen, photographer, 1931—

Mary A. Chubb, secretary, 1932—

H. H. Hill, field assistant, 1932—

Calvin W. McEwan, field assistant, 1932—

F. L. W. Richardson, Jr., field assistant, 1932—

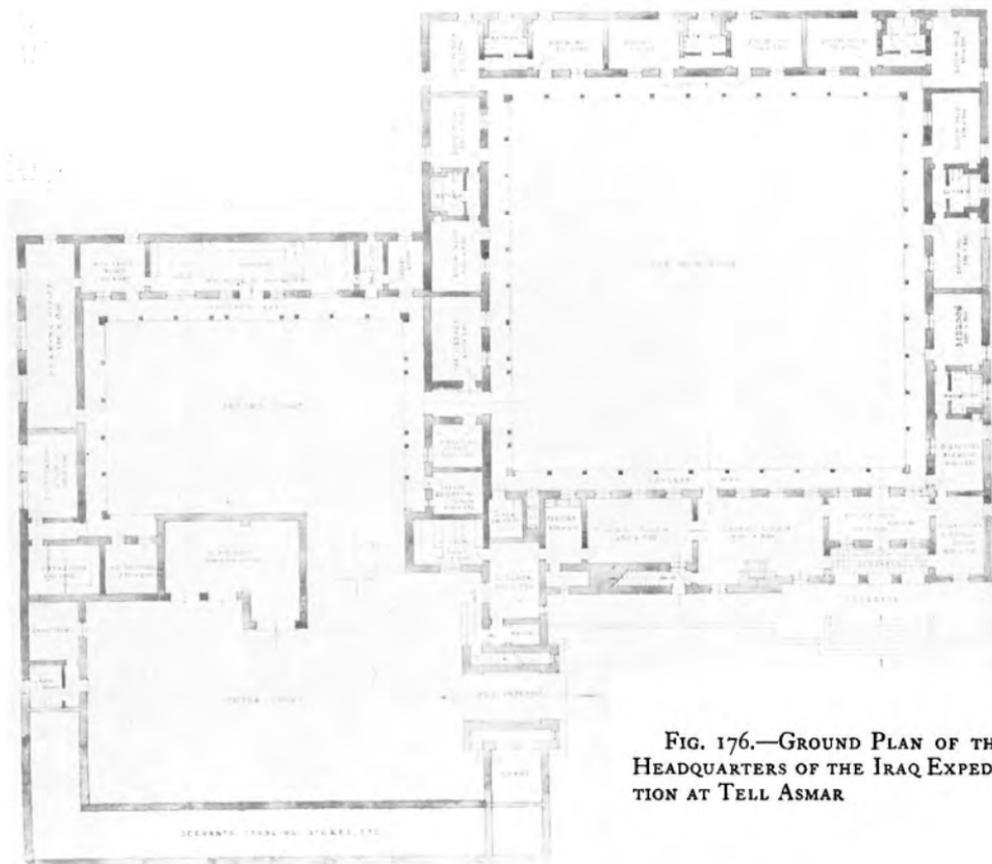


FIG. 176.—GROUND PLAN OF THE HEADQUARTERS OF THE IRAQ EXPEDITION AT TELL ASMAR

je. Dr. Frankfort maintained the immediate supervision of the Tell Asmar clearance; the first season's excavation of Khafaje (1930/31) was intrusted to Dr. Conrad Preusser. A small camp in which the staff could live was established at Khafaje; but, as often as possible, they returned to the headquarters at Tell Asmar.

Before the end of the first season a careful examination of the cuneiform sources discovered disclosed to Dr. Jacobsen, the Assyriologist of the expedition, unquestionable written evidence that Tell Asmar is ancient Eshnunna. Now Eshnunna is known from the records of Hammurabi as one of his adversaries during his long struggle against the Elamite Highlanders for supremacy in Babylonia. In working at Tell Asmar, therefore, the Institute is excavating a city which was in the very thick of the conflict between the Elamite Highlanders on the one hand and the Semitic Babylonians on the other. In view of this fact we should be fairly entitled to hope that the same site might contain in its lower strata evidences of the still earlier migration which brought the Sumerians from the northern Highlands into the eastern end of the Fertile Crescent. However this may be, it is now clear that Eshnunna was intimately involved in the Elamite operations against Babylonia as far back as the period of Sumerian glory, the Third Dynasty of Ur.

In the centuries preceding Hammurabi's dynasty at Babylon, Eshnunna had early gained her independence; at one time her kingdom had extended from Balad Ruz (see Fig. 173), some 25 miles northeast of the city, westward across the Tigris, past what is now Baghdad, to the Euphrates above its crossing at Rapiqu (modern Fallujah). A glance at the map discloses the fact that the ancient kingdom of Eshnunna had thus, by extending her territory transversely entirely across the Two Rivers, cut off the city of Babylon from its communications with the upper Euphrates. When we recall that the dynasty of Hammurabi was a family of Amorites from the middle Euphrates and the west, it will be seen that the power of the kingdom of Eshnunna had been interposed between the Babylonian dynasty and its kinsmen in the valley of the Euphrates above. The loss of Rapiqu therefore created a very threatening situation. We find that in Hammurabi's long struggle with the Elamites it was not until his fifteenth year that he was able to

recover Rapiqu and regain control of the Euphrates crossing. Eventually, after Eshnunna had been numbered among his Elamite adversaries for many years, he captured the city in his thirty-first year and thus gained control of both rivers above Babylon and also of the eastern region toward the Highlands. Later on, when the kingdom of Eshnunna had become a recognized district of his empire, Hammurabi dated a year in memory of the destruction of Eshnunna by a flood. Dr. Frankfort reports that thus far he has been unable to find any evidence of this flood in the ruins of the city—in striking contrast, as he aptly says, “with some other less well dated floods in Babylonia of which much has been heard of late.”

All told, evidence of about a score of early kings of Eshnunna has been found in the records discovered during the Tell Asmar excavation. Dated roughly, these kings extend from the middle of the twenty-third century to the last quarter of the twentieth century B.C., thus covering somewhat over three hundred years, from the time of the early rulers of the great Third Dynasty of Ur down into the reign of Hammurabi. The researches of the Institute at Eshnunna,³ therefore, are throwing important new light on the historical developments which led under the dynasty of Hammurabi to the supremacy and then to the illustrious position of the once insignificant town of Babylon.

On the instructive combinations and historical correlations just presented, which Dr. Frankfort has suggested,⁴ he is to be congratulated. His results, bringing Eshnunna into relationship with the general historical situation as between the Fertile Crescent and the Highlands and also with the rise of Babylon, are based upon a study of the remains of successive buildings lying in superimposed strata (Fig. 177), inscribed door sockets (e.g., Fig. 178), inscribed bricks, and some tablets. This combination of archeological, architectural, and inscriptional evidence enabled Dr. Frankfort and Dr.

³ For further details on the first season's work see Frankfort, Jacobsen, and Preusser, *Tell Asmar and Khafaje* (“Oriental Institute Communications,” No. 13 [Chicago, 1932]).

⁴ *Ibid.*, chap. ii.

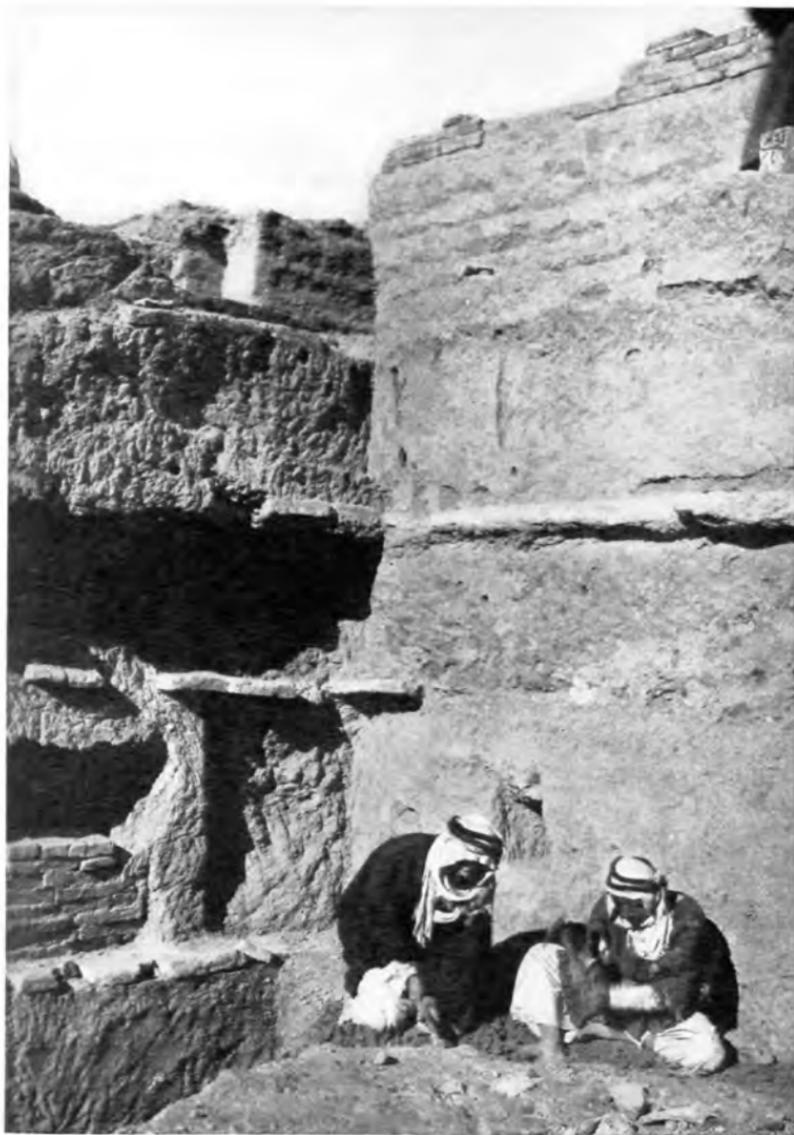


FIG. 177.—SUPERPOSITION OF ANCIENT BUILDINGS AT TELL ASMAR
Four floor levels are clearly visible

Jacobsen to establish their correlations in most cases with certainty, in others with a great degree of probability.

The results of the first two campaigns at Eshnunna, while of far-reaching historical importance, have also contributed essentially to



FIG. 178.—INSCRIBED STONE SOCKET IN WHICH A DOOR WAS PIVOTED

It bears the name of the subject prince Ituria of Eshnunna (23d century B.C.) and is dedicated to the deified King Gimilsin of Ur.

our knowledge of early architecture. The excavation of the main nucleus of buildings went down some 20 feet below the surface and disclosed the remains of the earliest palace at Eshnunna (Fig. 179). It is interesting to note that this palace is the earliest structure yet found in Babylonia of which an adequate reconstruction is possible (Fig. 180). The palace of the ruler of Eshnunna stands between two temples. Each of the three buildings has a court open to the sky. The reconstruction shows clearly that the entrance to each



FIG. 179.—GROUND PLAN OF THE ESHNUNNA PALACE (MIDDLE), THE PALACE CHAPEL (LEFT), AND THE GIMILSIN TEMPLE (RIGHT) DURING THE REIGN OF ILUSHULIA, SON OF ITURIA. DRAWING BY SETON LLOYD

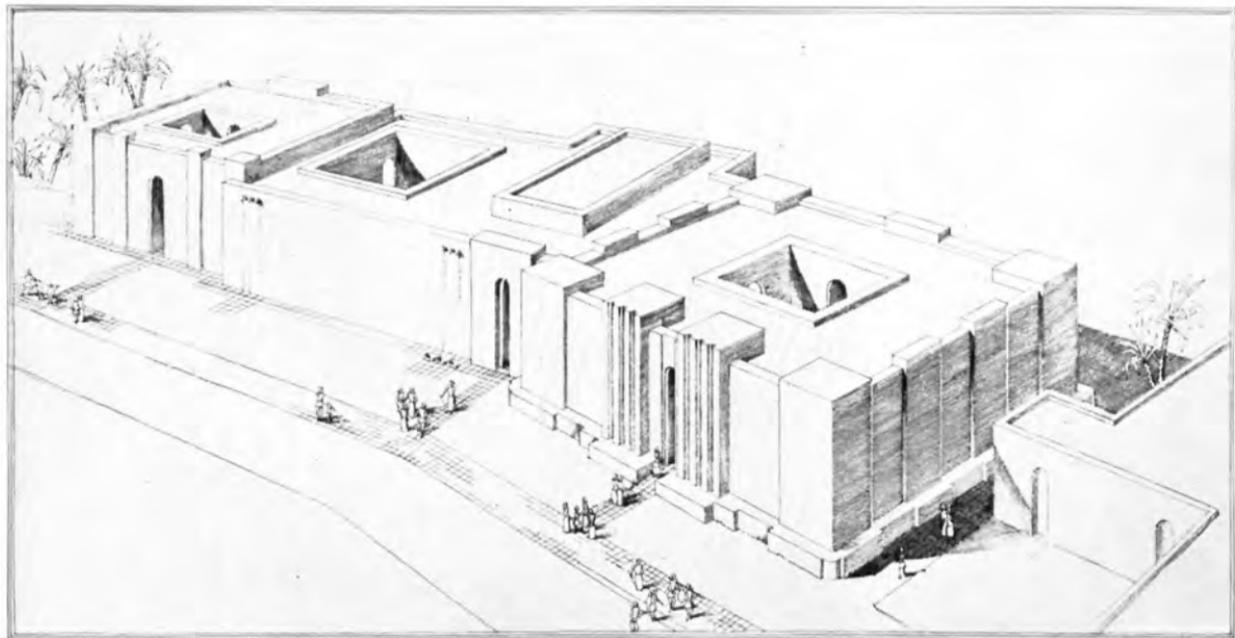


FIG. 180.—THE PALACE AND TEMPLE GROUP AT ESHNUNNA UNDER ILUSHULIA. RECONSTRUCTION BY SETON LLOYD

temple is directly in the axis of the building, whereas the entrance to the palace is at one side. In entering either of the temples, therefore, a priestly procession might go down the axis of the building, across the court, and enter the holy place in the rear, all the time advancing in a straight line; whereas in entering the palace it was necessary to turn sharply to the left and march down a long transverse corridor before one could reach the court and the inner apartments of the building. This is in accordance with the residential architecture of the ancient Near East, where every house had a staggered entrance, so that by no possibility could the interior be visible through the front door (cf. Fig. 179).

The temple on the right was originally dedicated to the worship of Gimilsin, one of the famous kings of the Third Dynasty of Ur and overlord of the rulers of Eshnunna. But after these kings of Ur who had made the city so illustrious were overthrown by the Amorites from the west and the Elamites from the east, the temple for the worship of Gimilsin was no longer necessary; it was then included in the palace. The smaller temple at the left was the chapel of the ruler, to which he gained access through a private entrance. An ablution slab at this entrance enabled the ruler to cleanse himself before entering the sacred building.

Later builders leveled the superstructure of the wrecked earlier group almost to its floor level and, in accordance with the ancient custom, erected their new buildings directly on the remains of the old. Thus the new structures covered up and preserved at least the ground plan of the earlier buildings. As we have mentioned above, these structures have revealed about a score of early rulers, extending from before the middle of the great Third Dynasty of Ur to the triumph of Hammurabi. The latter destroyed the uppermost group of buildings on this spot. Where the stratified architectural remains were insufficient for historical reconstruction, the written records which the place disclosed in the form of some fourteen hundred clay tablets proved very useful in solving at least some of the more difficult historical problems.

At the north end of the Tell Asmar site, at some distance from the palace, was discovered a group of very ancient houses which contained evidence showing that they belonged to the age of the

great Sargon of Akkad and his dynasty, that is, about 2500 to 2600 B.C. Curiously enough, this ground had never been inhabited by the later population, and the remains (e.g., Fig. 181) of this remote period were found close to the surface. Among a group of materials dated by the name of Shudurul, the last king of Sargon's dynasty,



FIG. 181.—A CHILD'S TOY WAGON OF POTTERY FROM THE TWENTY-SIXTH CENTURY B.C.

The broken eyelet for tying the pull-cord may be seen on the breast of the ram

the excavation disclosed a cylinder seal which is one of the most important discoveries at Tell Asmar and one of far-reaching significance for the early history of the East. An impression of this seal (Fig. 182) shows that it contains a beautifully carved figure of an elephant. The elephant, although known there, played no part in the art of Mesopotamia. Dr. Frankfort observed at once that in style this seal strikingly resembles the stamp seals discovered by Sir John Marshall at Mohenjo Daro in the lower Indus Valley.

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There can be no doubt that this Tell Asmar seal was imported from India, and this fact dates for the first time the remarkable early Indian civilization which now commonly bears the name of Mohenjo Daro. It belongs in the twenty-fifth or twenty-sixth century B.C., that is, in the middle of the third millennium. It is very grati-



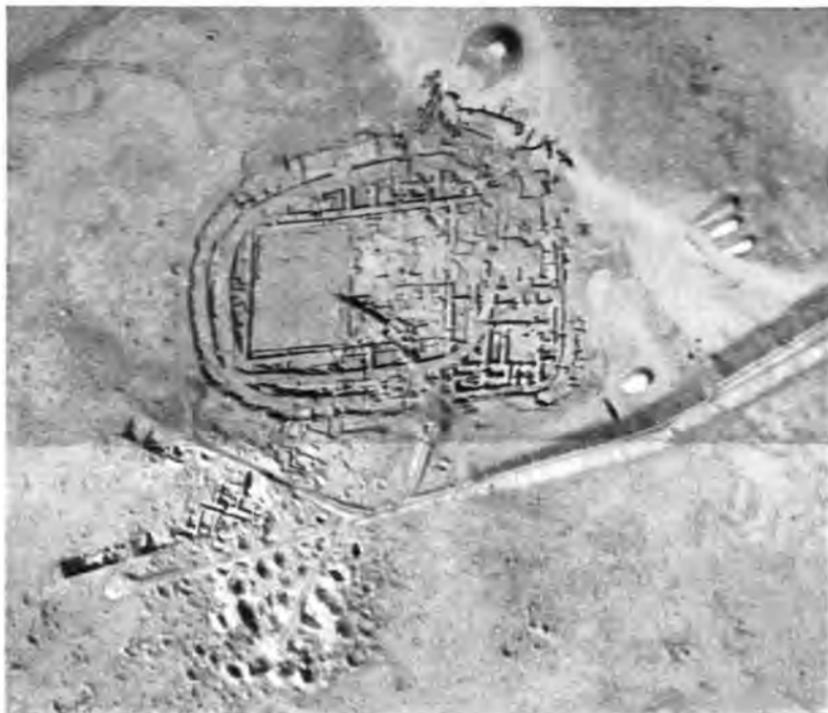
FIG. 182.—A CYLINDER SEAL IMPORTED FROM INDIA (ABOVE), DISCOVERED BY DR. FRANKFORT IN A DATED STRATUM AT TELL ASMAR, COMPARED WITH STAMP SEALS (BELOW) FOUND AT MOHENJO DARO

This prehistoric East Indian seal, dated to the twenty-sixth century B.C. by the objects among which it was found at Tell Asmar, for the first time furnishes an established date for the prehistoric East Indian civilization discovered by Sir John Marshall at Mohenjo Daro in the lower Indus Valley. The second row shows impressions from Mohenjo Daro stamp seals bearing similar designs.

fying that the excavations of the Institute in ancient Eshnunna have revealed this fact for the first time, and Dr. Frankfort is to be congratulated on the discovery.

In view of the existence of remains dating from the middle of the third millennium in a stratum practically at the surface, it is to be expected that the site will reveal very much earlier evidence as the clearance penetrates to lower strata. The fact that the Tell Asmar site is not a mound and hardly rises above the level of the surrounding plain is very instructive. It is clear that the later struc-

tures which must once have covered the present flat area have been destroyed by wind erosion which has carried away what was once



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FIG. 183.—AIR VIEW OF THE EXCAVATIONS AT KHAFAJE, SHOWING A TEMPLE OF 3000 B.C.

In the foreground are holes made by native thieves in search of antiquities before the official excavations began. The fortified oval beyond them contains the Sumerian temple.

a mound. We have become so used to speaking of city “mounds” that we have not realized the far-reaching effect of recent geological and atmospheric processes. There must be many ancient sites now no longer covered by mounds.

This fact is especially true of the second site (Fig. 183) which the Institute is at present excavating among the four included in its concession east of the Diyala. Khafaje likewise is practically on a level with the surrounding plain. When first approached by Dr. Chiera its surface was, and it still is, pock-marked by the excavations of modern natives who had been plundering the place and had already carried away priceless evidence. The excavation of Khafaje under the direction of Dr. Conrad Preusser penetrated only a little more than a meter below the desert surface. Important results were disclosed; but, curiously enough, in striking contrast with Eshnunna, the strata thus far cleared have furnished no inscriptions or tablets. The place may without doubt be considered a provincial city of the kingdom of Eshnunna.

The building at first uncovered proved to be a very massively constructed fortification of oval shape inclosing what was obviously a temple, with the usual court immediately inside the entrance and the holy place occupying the space immediately back of the court (Fig. 184). Architecturally the place is of the greatest interest, for its content quite clearly shows that it goes back to early Sumerian days of about 3000 B.C. No other early Sumerian construction with an oval ground plan has as yet been discovered.

The valuable antiquities revealed far exceed in number those found at Tell Asmar. Among the works of art discovered are three extraordinary statuettes of copper,⁵ each representing an old man

⁵ "Professor Cecil H. Desch, F.R.S., professor of metallurgy in the University of Sheffield, who for some years has been engaged in analyses of ancient metals and ores for the Sumer Committee of the British Association for the Advancement of Science, has kindly analyzed the metal of these statues. He finds:

Copper.	99%
Tin	∞.63%
Lead and iron	traces
Nickel	nil

These figures, then, consist of almost pure copper. Professor Desch says that a slight amount of tin has occasionally, though rarely, been found heretofore in Sumerian copper, that the tin here was certainly not added intentionally, but that the presence of tin in copper ore is unusual. As we learn more about the sources of ore in Western Asia this unusual compound may help us to find the place where the Sumerians obtained their raw material. Without doubt, the three statuettes were cast

in an attitude of worship (Figs. 185-86). The largest of the three was kept for the Baghdad Museum collections; the two smaller ones were awarded to the Institute. Evidently some kind of vessel was

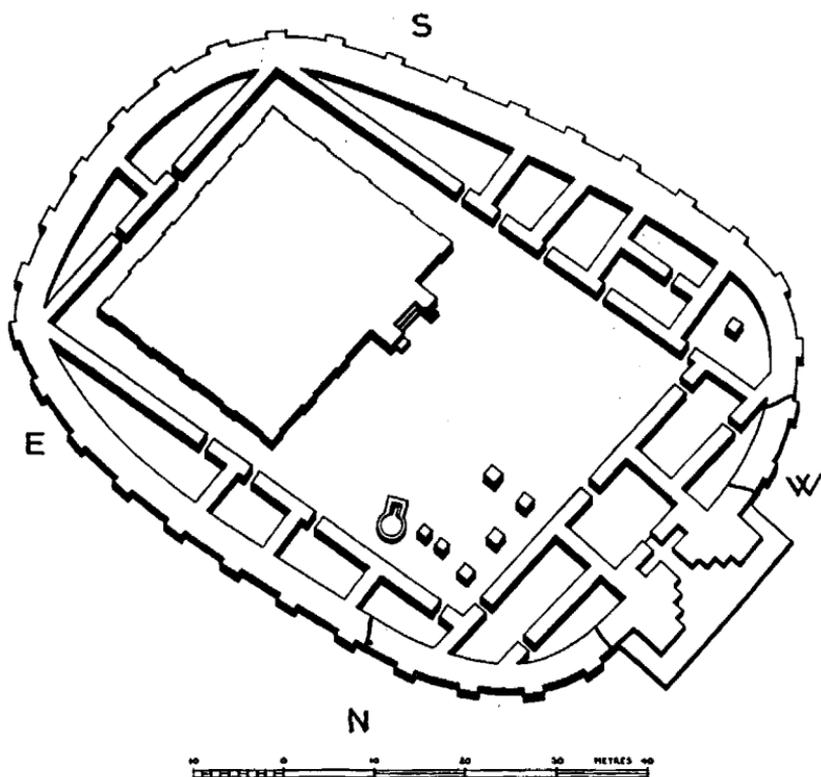


FIG. 184.—PLAN OF THE TEMPLE EXCAVATED AT KHAFAJE

The rectangular temple building is surrounded by a massive oval fortification with salient towers. Compare Figure 183.

in a mold, for on the soles of the feet are small lumps of copper left from the casting. The mold must have been rather complicated. The pedestals, however, were forged of copper, their separate parts welded together. The feet of the figures, in turn, were welded to the pedestals." (Quoted from *Tell Asmar and Khafaje*, p. 78.)



FIG. 185.—THREE COPPER STATUETTES OF 3000 B.C., STILL INTERLOCKED AS FOUND BY DR. PREUSSER BURIED JUST INSIDE THE WALL OF THE OVAL FORTIFICATION AT KHAFAJE

borne on the head of each statuette, for remains of a support for such a vessel may be seen on the head of the largest figure. The



FIG. 186.—THE THREE COPPER STATUETTES AFTER DISENGAGEMENT

The nude figures are those of three priests in an attitude of worship; presumably they once bore offerings on their heads. The figures were cast of almost pure copper in an age before bronze or hollow casting was known.

other two figures also showed traces of similar supports, but they had in both cases been completely broken away and were not found in the excavation. The figures are nude except for horizontally striped girdles. All three have long beards. The curious hair of the

tallest figure is cut short except for two long, heavy curls dropping down in front of the ears; the two small figures have hair clipped horizontally across the back of the neck. Standing as they do in a posture of worship, the figures evidently represent priests bringing offerings on their heads. They had probably been set up originally in the presence of the god's image, and perhaps in time of war were removed and hastily buried just inside the inner inclosure wall where Dr. Preusser found them.

Since the largest figure reached the Baghdad Museum it has been reported that, as a result of cleaning, an inscription was discovered on its back between the shoulders. Cleaning of one of the smaller figures has not resulted in any such discovery; the second small one has not yet been cleaned.

Another very important work of art discovered by Dr. Preusser is a relief which had evidently been placed in the temple as a votive offering by the ruler (see Fig. 6). It shows him (in the lower row) walking ahead of his chariot, which he has left in the hands of his grooms or attendants, as though he were advancing into a sanctuary. Above are two registers. The upper one shows the ruler seated at the right and his lady at the left, with music and attendants as at a feast; the middle register shows servants bringing food. It is an extraordinary fact that Mr. Woolley discovered at Ur a fragment of a similar scene—indeed, practically a duplicate—from which it is possible to restore, as Frankfort has done, the lower left-hand corner of the Khafaje plaque, which had unfortunately been broken out and was not found in the course of the excavation. Since the heads of the creatures drawing the chariot are lacking on the Ur fragment, a good deal of conjecture as to their identity had arisen. On the Khafaje plaque, however, the heads are preserved, and Frankfort concludes that the animals are horses or mules. We must admit that the ancient Sumerian sculptor was not very successful in drawing either the heads or the feet of horses. But it is hardly conceivable that these animals can be anything else. If this conclusion is correct, the horse is nearly one thousand years earlier in ancient Babylonia than we have heretofore supposed. This fact is of far-reaching historical importance. The horse was domesticated in or behind the northern Highland Zone, and those who domes-

ticated him were without doubt Indo-Europeans. The arrival of the horse on the Fertile Crescent was an announcement long in advance of the ultimate coming of the Indo-Europeans themselves.



FIG. 187.—DISENGAGING A FRAGILE SUMERIAN STATUETTE AT KHAFAJE AND CLEANING IT BY USE OF COMPRESSED AIR

Mr. Delougaz is holding the tube of a superannuated paint-spray by which he controls a supply of compressed air for blowing away the dust.

The earlier structures at Khafaje are of plano-convex bricks and belong to a very early stage. The discovery of these buildings has extended some 90 kilometers farther northward the region where buildings of the people who used this type of brick are known. In view of the age of the materials found within only a little more than

a meter below the surface (cf. p. 355), it may be expected that the lower strata of this city will disclose materials and evidences from a very remote age. Since the first season the excavation of Khafaje has continued under Mr. P. Delougaz (Fig. 187).

It will be seen that the excavations of the Institute on the east of the Diyala are contributing important new results to the history of civilization and adding especially to our knowledge in the direction of correlation between the Fertile Crescent and the northern Highland Zone, through which the advancing Indo-Europeans eventually penetrated to appear for the first time on the stage of human history.

CHAPTER XVI

THE IRAQ EXPEDITION: ASSYRIAN SECTION

In the eastern half of the Fertile Crescent two great civilizations arose: Babylonian and Assyrian. Without doubt both reach back into the fourth millennium B.C. Though civilization in the Fertile Crescent undoubtedly originated in Babylonia rather than in Assyria, nevertheless both cultures were due to composite populations made up of intruding immigrants from the Highland Zone mingled with peoples already dwelling in the Fertile Crescent. Little is known of the racial relationships of the Highlanders who shared in the development of ancient Assyria, but there is good evidence that the Hittites contributed essentially to its development.

Field researches and excavation in Assyria go back to the early work of both English and French archeologists in the first half of the nineteenth century. Among the archeological pioneers one of the ablest was a Frenchman, Place, who in 1851 began excavations at Khorsabad. The site is only 15 miles northeast of modern Mosul, which lies on the west bank of the Tigris, faced by ancient Nineveh—a still nearer neighbor—on the east bank.

Like so many human stories, the history of Khorsabad is one of personal vanity disappointed and royal ambition thwarted. The ablest general of his time led the Assyrian armies of Shalmaneser V to victory against Samaria and thus in 723 B.C. destroyed the kingdom of the ten tribes of Israel. The great soldier then usurped the throne and proclaimed himself king, as Sargon, the second Assyrian ruler of that name. Perhaps resenting the splendor of Nineveh (which proclaimed the glory of older Assyrian sovereigns whose illustrious birth and royal blood he did not share), Sargon left Nineveh and, going a day's march northward, established in the Kurdish foothills a royal city of his own, which was to bear his name: Dur-Sharrukin ("Castle of Sargon," "Sargonburg"). The prestige of Nineveh, its more favorable strategic position, the commercial

highways which linked it with its neighbors in all directions—all these factors made Sargon's plan to shift the capital of Assyria to his new city impossible of realization. Having gained the throne in 722, he was assassinated in 705 B.C. His reign, therefore, was too short to make his new city foundation at all permanent. His son and successor, the great Sennacherib, returned from Dur-Sharrukin (Khorsabad) to the traditional splendors of Nineveh.

An ancient city ruin which is the product of a single reign is archeologically a much easier problem than a place like Eshnunna, where the architectural wreckage is so "telescoped" together, to use Frankfort's apt term, that its disengagement, prerequisite to the proper understanding of the ruins, is a problem of much complication.

Sargon's city was a square about 1 mile on each side, surrounded by a massive towered wall with two gates on each side except the northwest (Fig. 188). There instead of a second gate the vast palace of the king was placed astride the wall, so that a large part of it projected beyond the area of the city. It was, of course, strongly fortified. Unfortunately the walls and other structures were for the most part built of sun-dried brick. Forsaken before 700 B.C., these structures have been exposed to the heavy winter rains of the southern Kurdish hills for 2,600 years, with the result that the entire complex has fallen into vast masses of unrecognizable débris. Place spent four years endeavoring to recover the plans and architectural features of this imposing site. When we take into consideration the field methods universally practiced in his day, we must admit that the results which he obtained and the publication which he produced form an unprecedented achievement, deserving of the highest praise. The significance of Place's achievement is greatly enhanced when we realize the difficulties in the midst of which he worked, not least the constant threat of disease in a malaria-infested region.

In the early spring of 1920 the writer visited Khorsabad for the first time and confirmed the impression which he had already gained from Place's publication that there was still a great deal of archaeological work to be done in the city of Sargon. The great palace area was a mass of unrecognizable mounds. The city wall could be

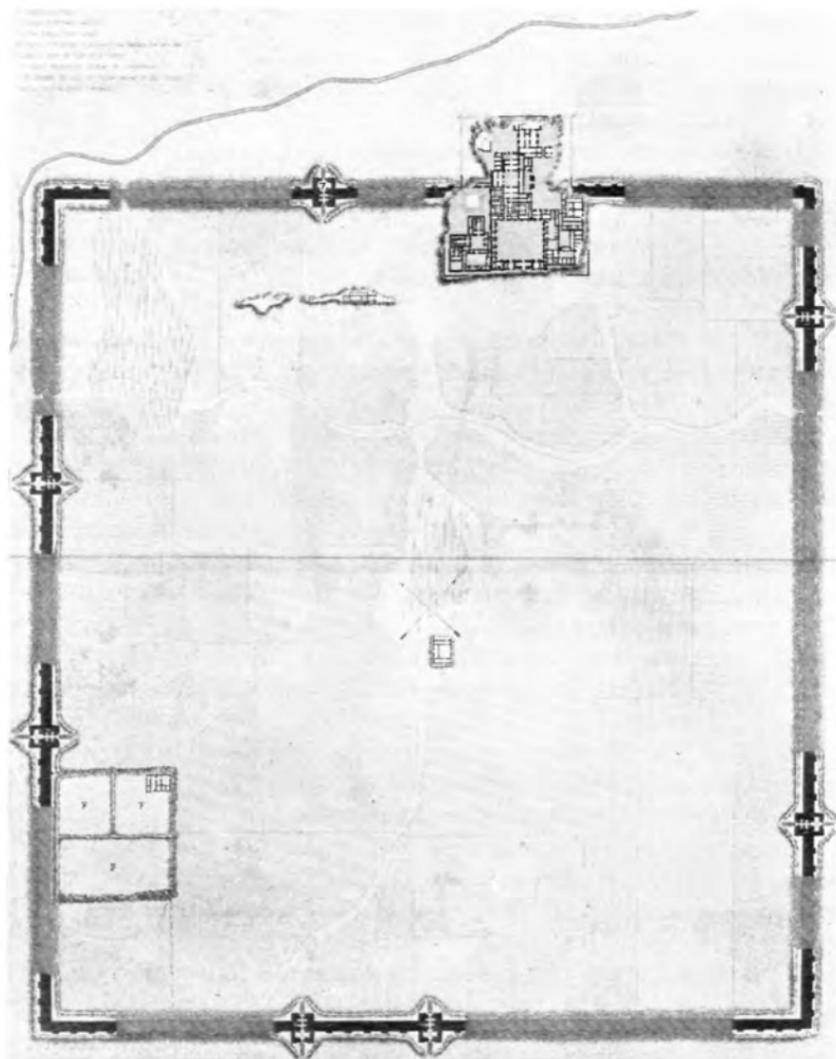


FIG. 188.—PLAN OF THE CITY AND PALACE OF KHORSABAD, AFTER PLACE

traced and the positions of the gates recognized; but the entire site, including the mounds, was under cultivation by the natives, who had been raising grain on the ruins of Sargon's capital for many, many centuries. The same is true of Nineveh itself, which had survived only a century longer than the city of Sargon. One of our local native guides brought a hoe, and with this and his two hands he cleared away the grass and exposed a great block of stone, with a magnificent inscription of Sargon, which seemed to belong to one of the gates. There were many rumors of sculptures lying just below the surface among the palace mounds, but the brevity of our visit made it impossible to verify these reports.

Some years later Dr. Edward Chiera went to Iraq as field director of the American School of Oriental Research in Baghdad. He organized a small expedition in connection with the Iraq Museum in Baghdad and excavated in the spring of 1925 at a site about 10 miles southwest of Kirkuk. The small mound selected for excavation proved to be the house of a rich landowner who had lived about 1500 B.C. Among other objects it yielded more than a thousand tablets, comprising the complete archives of the family for six generations. The discovery was important because this new group of tablets derived from a civilization hitherto unknown. In 1927/28 Dr. Chiera headed a second expedition under the joint auspices of Harvard University and the American School of Oriental Research in Baghdad. Excavations were undertaken in larger mounds on the same site, which proved to be the ancient city of Nuzi. A temple and other buildings were discovered, and a second large group of tablets came to light.

During his second campaign at Nuzi Professor Chiera was already under appointment by the University of Chicago. The Director of the Institute therefore requested him to proceed to Mosul to look up a large collection of fragments of royal annals, recorded on the customary prisms, which the Director had seen in Mosul on his visit in 1920, but for which the natives were then asking exorbitant prices. Not having disposed of these precious cuneiform records during the intervening years, the native dealers at Mosul were more amenable to reason when Professor Chiera arrived, and he was able to secure the fragments for the Oriental Institute, where

they are now gradually being put together. They are furnishing invaluable new sources for the history of Western Asia. A second reason for Professor Chiera's visit to Mosul was the writer's hope that it might be possible for the Oriental Institute to take up the further study of Sargon's great city at Khorsabad.

For Professor Chiera the natives of Khorsabad uncovered an example of the sculptures of which the writer had heard. The fragment, showing two beautiful horses' heads, lay prostrate, but evidently belonged to wall sculptures such as customarily adorned the halls of Assyrian palaces. Having been granted a concession by the Iraq government to excavate at Khorsabad, the Institute began operations there in the autumn of 1928, under Professor Chiera as field director. The sculptures which Botta and Place had seen had suffered frightful destruction in the more than two generations since Place had left. Some of this destruction was the work of nature, for the heavy precipitation causes rapid and steady disintegration of the stone sculptures. Then too the natives habitually burn them for lime. The remainder of the relief of the horses was duly found; but the head of the groom, seen and sketched by the French, had disappeared. All of the upper portions of the sculptures which Professor Chiera found near the north corner of the palace, chiefly in Corridor 10 and Court VIII as designated by Place (see Fig. 192), had either disappeared or were so weathered as to be unrecognizable (Fig. 189).

The central gateway leading from Court VIII to Court VII was once adorned with figures of winged bulls. A relatively small pair stood at the sides of the gateway passage in the thickness of the wall; and two much larger ones flanked the gate on the outside, forming part of the façade on either side of it. The smaller pair and one of the larger pair had been almost completely destroyed. The survivor of the larger pair, however, had fallen face downward into the soft earth (cf. Fig. 32), had then been covered with the débris of the falling building, and was thus preserved, although broken into a considerable number of pieces. An attempt to remove a sculpture of this size from the Kurdish hills and then to America would be a hazardous undertaking and was certain to be costly in the extreme. Professor Chiera therefore cabled the Director of the Insti-



FIG. 189.—WALL RELIEFS IN COURT VIII OF THE KHORSABAD PALACE

tute, asking whether he should make any effort to secure the bull or to bring it to America. Although no money was in the budget to pay the bill, the writer promptly cabled Professor Chiera to ask the Iraq government for the bull and to bring it to America. This monolithic sculpture is 16 feet high, 16 feet long, and weighs some



FIG. 190.—THE LARGEST FRAGMENT OF THE BULL, WEIGHING NINETEEN TONS CRATED, STARTING FOR THE TIGRIS ON A FIVE-TON TRUCK

Inspection of overloaded tires and springs. The wheels collapsed at short intervals on the 16-mile stretch to the Tigris.

40 tons. It is fortunate for the Institute that the once single block of stone was broken into many pieces, for the largest fragment alone weighed 19 tons crated (Fig. 190). The extraordinary story of the transportation of the whole to America must be told elsewhere. The bull now stands in the new Oriental Institute building (see Fig. 43) and forms without doubt the most valuable ancient work in the Institute collections.

Professor Chiera's brilliantly successful campaign thus saved from speedy destruction a splendid body of Assyrian sculptures.

Selected portions filling seventy-five boxes are now in the Baghdad Museum; they will form an important part of the Iraq government collections when they shall have been unpacked and installed as exhibits. Besides the bull a considerable group of relief sculptures was assigned to the Institute in the official division. In addition, four important scenes were loaned to the Institute for temporary exhibition at the opening of the new Institute building in Chicago on December 5, 1931. These pieces have now been returned to the Iraq government. The writer desires to take this occasion to express his very appreciative thanks to Dr. Jordan, head of the Department of Antiquities in Baghdad, who gave his permission that these pieces should be sent to America as a loan.

As already narrated, the need of Professor Chiera's services in the management of the Assyrian Dictionary made it necessary that he should return to America. The season of 1928/29, therefore, marked the termination of his investigations at Khorsabad. On December 23, 1929, Dr. Frankfort arrived in Iraq as field director of the Iraq Expedition, as it was henceforth called. It was planned that this expedition should include operations both in Babylonia and in Assyria, but that the larger portion of the available funds and the larger staff should be employed in Babylonia, while the work in Assyria at Khorsabad was to be carried on less intensively. Early in 1930 Dr. Frankfort's group resumed investigations in the city of Sargon, with Mr. Gordon Loud, one of the architects of the Iraq Expedition, in charge.

This great site offered divers opportunities. The most important building was obviously the palace; but besides this there was the great city wall with its gates, other large buildings existed within the area of the city but at a distance from the palace, and finally the city area as a whole might well contain instructive remains of Assyrian houses of the citizens. An excavation of the city gate nearest the palace (No. 7 in Fig. 188) disclosed the interesting fact that no doors had ever been hung there, but that, on the contrary, the gateway itself had been closed up with rough rubble and mud plaster (Fig. 191). This showed that when death overtook him Sargon had not yet been able to complete the building of his city.

In the palace (Figs. 192-93) an important discovery was that of the throneroom. This great hall, thought by Place to have been a court, is marked VII in his plan. The more highly developed field methods and the much more careful observation practiced by a modern expedition are interestingly illustrated by the Institute's excavation of this hall. Careful examination of the débris cumbering the place showed that it contained remains of timbers which



FIG. 191.—A CITY GATE WHICH WAS NEVER USED

Instead of being provided with doors, this gate was left unfinished and was blocked with rubble. The cobble-paved street leads toward us into the city.

could be nothing else than ceiling beams. In addition to this there was a good deal of color. Dr. Frankfort reports:

The patterns decorating the plaster laid over the beams, and also patterns of the colored plaster which had apparently covered the upper parts of the walls, above the row of relief slabs, have been studied, copied, and restored in color by Mr. Loud and form an entirely new contribution to our knowledge of Assyrian architectural decoration.

In demonstration that this great hall formed Sargon's throneroom, the excavation disclosed an enormous monolithic block on which the throne itself had once stood. This block measured 4 by

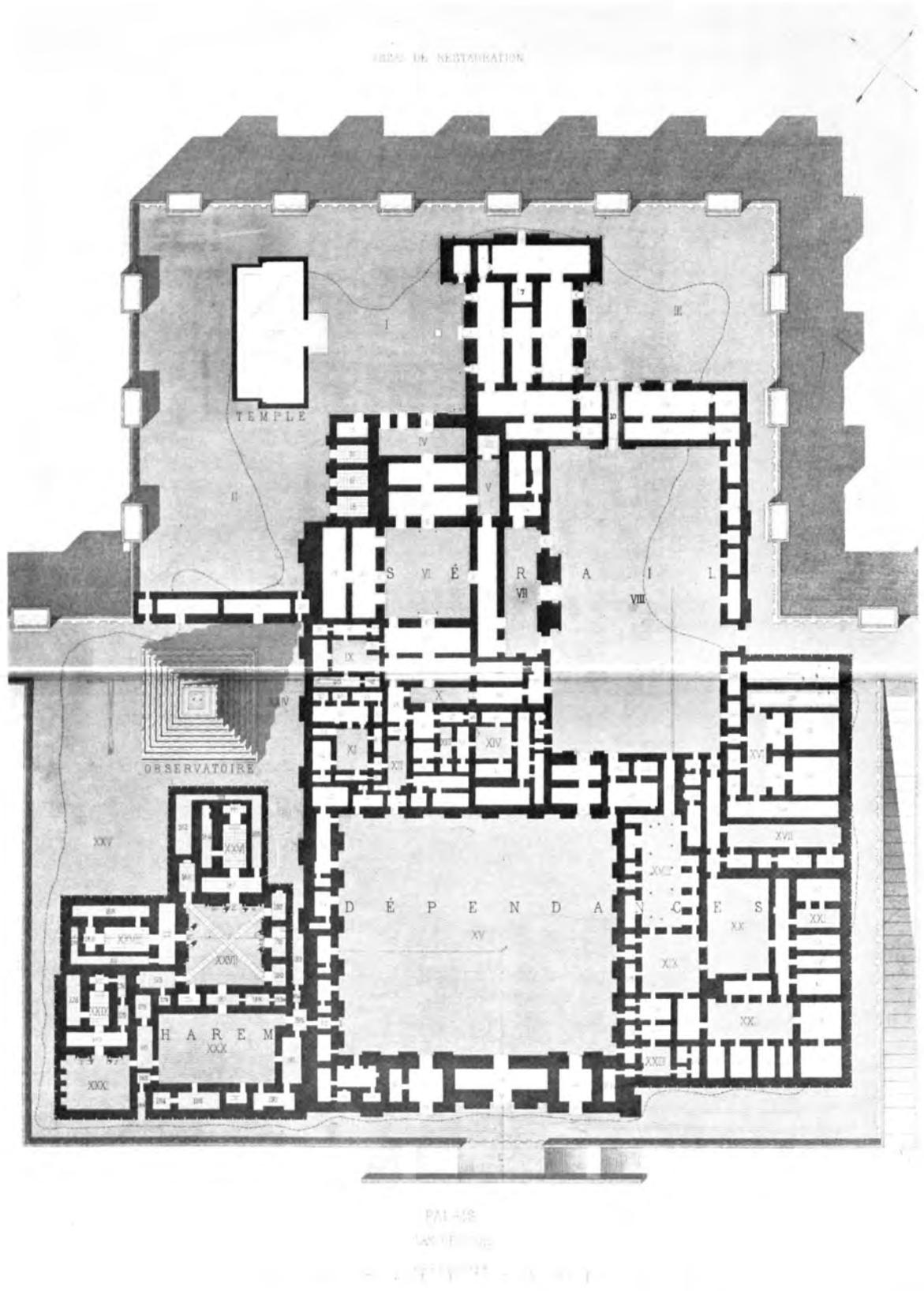


FIG. 192.—PLAN OF SARGON'S PALACE, AS RECONSTRUCTED BY PLACE



FIG. 193.—BIRD'S-EYE VIEW OF SARGON'S PALACE, AS RECONSTRUCTED BY PLACE



FIG. 194.—RELIEFS SCULPTURED ON ONE SIDE OF A HUGE MONOLITHIC BLOCK WHICH FORMED THE BASE OF KING SARGON'S THRONE IN HIS GREAT PALACE AUDIENCE HALL OR THRONEROOM

The monolith was found broken. Part of it is here seen packed for transport. The sculpture shows Sargon in his chariot (at left) after a battle. His officers are piling up before him a heap of heads of slain enemies.

5 meters—that is, about 13 by 16 feet—and was almost 5 feet (1½ meters) thick. The sides of this throne base were embellished with interesting sculptures unfortunately very badly damaged (Fig. 194).

This great royal hall of Sargon, where he sat to receive his court in oriental splendor, must have been a place of impressive mag-



FIG. 195.—SARGON'S THRONEROOM IN HIS PALACE AT KHORSABAD

The great bull now in Chicago (see Fig. 43) adorned the outer face of the central doorway seen in the middle of the left-hand wall. The throne stood at the far end.

nificence. It is to be hoped that the surviving wreckage (Fig. 195) may enable Mr. Loud to put together on paper an architectural reconstruction which will suggest something of the beauty and impressiveness of the place, with two great bulls adorning the main entrance in the center of one long wall, the relief sculptures adorning the bases of the walls entirely around the hall, the richly colored decorative scheme covering these walls above the sculptures, and the beamed ceiling likewise gay with bright colors. Reliefs showing Sargon's son, Sennacherib, enthroned at Lachish, as well as other, similar sources, would make it possible to insert even the throne itself.

In one of the smaller rooms of the palace (No. 7 in Fig. 192), where Botta had seen and copied some exceedingly interesting relief scenes of horsemen hunting in a forest and the king riding in his chariot among the trees, the excavation disclosed an appalling amount of damage in the eighty years which have elapsed since Botta made his copies. It was possible, however, to salvage three of these scenes in a very distressingly damaged condition, and they are now being reconstructed and restored as far as possible for installation in the Assyrian Hall of the new Institute building (Fig. 196).

A large quarter in the southern corner of the palace, regarded by Place as the "harem," was long ago recognized by Andrae as a group of temples. This identification has been confirmed by the Institute expedition which worked under Mr. Loud on this portion of the palace from the middle of February until early April, 1932. Figure 197, showing the front of the temple of Sin (the moon-god), reveals the state of destruction of these six palace temples. The enormous threshold of the central doorway has been shattered by vandals who were attempting to remove it. On either side of this block rises a low platform the face of which is adorned with glazed brick, once in bright colors but now sadly weathered and faded. These decorative scenes have long been known from Place's publication. They depict sacred symbols: a lion, an eagle, a bull, a fig tree, and a grain-seeder (one of the earliest ancestors of modern agricultural machinery). As there are two of these scenes, one of them has been retained by the Iraq government and the other has been given to the Institute. It is now being carefully salvaged and packed for shipment to Chicago. In spite of its terribly damaged condition there is good reason for hoping that it may be restored and installed as an impressive museum piece, and Frankfort anticipates that when the incrustation of glazed brick has been properly treated and installed we shall be able "to gain at least some idea of its original splendor."

Near the southern corner, against the southwest wall, Place's plan (Fig. 188) indicates a large rectangular building marked *F*, some 650 feet wide and over 750 feet long. It has been turned around 90° contraclockwise by error in Place's plan and should be shown



FIG. 196.—RELIEF SCENE OF A HUNTING PARTY, FROM SARGON'S PALACE AT KHORSABAD
In course of reconstruction by Donatello Bastiani, a sculptor on the Institute's staff at Chicago



FIG. 197.—FRONT OF THE TEMPLE OF THE MOON-GOD SIN IN THE PALACE AT KHORSABAD

The enormous stone doorsill has been cracked by vandals in their attempts to remove it. At each side of it is a low platform faced with once richly colored glazed brick. Above the farther platform rises fluted ornamentation.

astride the city wall. The excavation of this building, which has never been cleared, will undoubtedly reveal architectural remains of importance; but the clearance has not as yet proceeded far enough to show anything about the nature of the structure.

The city lasted too short a time for the entire inclosure within the city walls, 1 mile square, to be filled with houses. Nevertheless a considerable area must have been occupied by the dwellings of the citizens. Thus far, however, trial trenches at various points have failed to disclose anything more than scattered indications, such as pottery, basketry, ashes, etc., that human habitations once occupied this ground. Frankfort is inclined to believe that the houses were too flimsily built to survive the destructive influences of the unfavorable climate.

It is one of the great advantages of an institution represented by field researches of this kind that its various field staffs scattered throughout the Near East are able to carry out local explorations. In the vicinity of Khorsabad Dr. Thorkild Jacobsen, Assyriologist of the Iraq Expedition, last season discovered a bridge of stone masonry bearing an inscription of Sennacherib. This bridge, built about 700 B.C., is the oldest example of bridge engineering now surviving. The Nile was far too large to be bridged by ancient engineers; hence the examples of bridges surviving in Egypt are only viaducts. The rivers of Western Asia, especially in the valleys of the Tigris and the Euphrates, were freshets which were dry a large part of the year. Over such a dry bed it was easily possible to throw a bridge. It is expected that when the Institute is able to excavate and record for publication the newly discovered structure, this example of bridge engineering carried out by Sennacherib will furnish some interesting revelations.

CHAPTER XVII

THE ASSYRIAN DICTIONARY

The preceding survey of the Institute's expeditions discloses a far-reaching program of field activities. Nevertheless, oriental science has made merely a beginning in the great task of recovering the story of the origins and early development of civilization, especially among the ancient peoples of Western Asia. This fact emerges clearly enough as we contemplate the vast masses of cuneiform records and documents in various languages. We may now follow them from the Sumerian, Babylonian, and Old Persian on the east through Assyrian and various western dialects (chiefly Semitic) of Syria and Palestine to the so-called Hittite dialects of Asia Minor on the west, not to mention Haldian and other languages of the region on the north of Mesopotamia.

This situation demands not only carefully conducted field expeditions permanently organized but also in the scholar's library at home an organized attack on a number of large tasks indispensable to a proper understanding of the vast body of cuneiform documents already available in museums or in published form. In the development of research at the American headquarters of the Institute, therefore, organization for the production of an Assyro-Babylonian dictionary based on all the known cuneiform documents was placed first on the program. The reasons were convincing. Though the memorable decipherment of cuneiform by Sir Henry Rawlinson in the middle of the nineteenth century enabled modern scholars for the first time to read Old Persian, Babylonian, Assyrian, and eventually other important languages of Western Asia, it did not, of course, meet the need for a comprehensive dictionary. To satisfy this need the pioneer students of cuneiform made praiseworthy efforts. Every investigator who accomplished anything of consequence gradually built up a personal dictionary, usually in the form of a card file, drawn from the documents as fast as he could read and understand them.

In studying ancient documents which modern scholars are just beginning to read, the investigator inevitably meets new words which he does not understand. In most cases such unfamiliar and often obscure words fall into more or less specialized groups—terms for diseases, medicines, bodily organs, minerals, plants, animals, social classes, legal processes, business and legal transactions, architectural forms, parts of buildings or of ships, and so on—though many other words current even in general and common usage are equally perplexing. The volume of documents quickly outran the ability of any one scholar to go through them and study the new words. Special glossaries appended to newly published documents or groups of documents, together with word studies scattered through journals and monographs in half a dozen modern languages, have, though adding greatly to modern knowledge, made it increasingly difficult for the individual worker to bring all these new bodies of fact “under one hat.” What has been even more serious in its consequences is the fact that in such a situation erroneous renderings, originally mere guesses, have become current, resulting in totally misleading translations of words and phrases with which the unsuspecting translator has considered himself familiar since university student days. Every thoughtful orientalist knows very well that he is involved in this difficult situation, whether he is translating Asiatic cuneiform or Egyptian hieroglyphic documents.

Although aware of his predicament, the most conscientious investigator of these ancient documents is quite powerless, single-handed, to extricate himself. Several such individual efforts have been made, all of them most praiseworthy and deserving of the fullest recognition. The earliest of these attempts to meet the needs of the pioneer Assyriologists for some kind of dictionary are very interesting. As far back as 1855, only a few years after Rawlinson’s announcement of his decipherment, a Frenchman, F. de Saulcy, published a little cuneiform glossary covering nearly 90 pages in the *Journal asiatique*. It is entitled “Lexique de l’inscription assyrienne de Behistoun” and was printed in cuneiform type, then already available.

In 1866 Edwin Norris published what he called a “Specimen of an Assyrian Dictionary” in the *Journal of the Royal Asiatic Society*.

It occupied 32 pages. Referring to this attempt the aged Norris says: "Many years must necessarily elapse before an approach can be made to completeness in such a work, and the best Assyrian decipherers are most assured of the vague character of their interpretations, whenever the subject goes much beyond plain narration, or whenever words of infrequent occurrence are made use of."¹ A few weeks later Mr. Norris unexpectedly received an offer of funds for the publishing of his complete dictionary. Although he was a man of advanced age, he accepted the offer and proceeded with the work of editing and publication. The first volume was issued in 1868. In the preface Norris modestly quotes a statement which Friedrich Max Müller had included in the prospectus of his translation of the Vedic hymns:

With every year, with every month, new advances are made, and words and thoughts which but lately seemed utterly unintelligible receive an unexpected light from the ingenuity of European students. Fifty years hence I hope that my own translation may be antiquated and forgotten. No one can be more conscious of its shortcomings than I am.

Norris' pioneer effort was never carried beyond the third volume, which was issued in 1872. It brought the work down to the letter "N"—1,068 pages. Meantime a useful little glossary of 139 words had been published in the *Journal of the Royal Asiatic Society* for the year 1868. It was the work of one of the prominent pioneers in cuneiform decipherment, Mr. H. Fox Talbot; he modestly entitled it "Contributions towards a Glossary of the Assyrian Language." The method by which these early dictionaries were compiled is indicated in an interesting remark by Mr. Talbot: "I have been very careful to refer to passages in which the words are found, so as to enable anyone to verify their accuracy."²

The enthusiasm of the heroic age of decipherment declined in England after the beginning of the seventies, and the interest in dictionary enterprises waned. In the eighties it awoke in Germany,

¹ Edwin Norris, "Specimen of an Assyrian Dictionary," *Journal of the Royal Asiatic Society*, n.s., II (1866), 225.

² H. F. Talbot, "Contributions towards a Glossary of the Assyrian Language," *Journal of the Royal Asiatic Society*, n.s., III (1868), 1.

where in 1882-86 Strassmaier published an alphabetic list of Assyrian and Akkadian words. A much more ambitious work by Friedrich Delitzsch followed shortly, an *Assyrisches Wörterbuch*, which indicated in its title that it covered all the cuneiform literature available in published form. But Delitzsch was unable single-handed to carry out and complete a work of this scope. Before it had reached the end of *aleph*, the first letter of the Semitic alphabet, he abandoned the enterprise with the publication of the third part, which made a total of 488 pages. Delitzsch succeeded in completing his dictionary in an abridged form in 1896, when it was published as his *Assyrisches Handwörterbuch*. In the thirty-seven years since it appeared this dictionary has been of invaluable service to orientalists all over the world. It did not, however, cover all the available materials at the time of its appearance; and since then a large body of new documents has been published. Special glossaries and supplements such as Meissner's very useful *Supplement zu den assyrischen Wörterbüchern* and his two *Beiträge zum assyrischen Wörterbuch* in the "Assyriological Studies" of the Oriental Institute have furnished the needed consideration of many new words or clarified our understanding of old ones. In 1905 Dr. Muss-Arnolt completed his *Concise Dictionary of the Assyrian Language*, which had begun to appear as early as 1894.

This discussion of the need of an Assyrian Dictionary makes no pretense to do anything more than call attention to the fundamental fact that each attempt to produce such a dictionary has heretofore been a "one-man job," in which the solitary editor has, so far as the writer knows, made no effort to apply or introduce mechanical helps of any sort. The outstanding lexicographical compilations at present available are:

- F. de Saulcy, "Lexique de l'inscription assyrienne de Behistoun," *Journal asiatique*, 5^{ème} ser., V (1855), 109-97.
 Edwin Norris, "Specimen of an Assyrian Dictionary," *Journal of the Royal Asiatic Society*, n.s., II (1866), 225-56.
 H. F. Talbot, "Contributions towards a Glossary of the Assyrian Language," *Journal of the Royal Asiatic Society*, n.s., III (1868), 1-64.
 Edwin Norris, *Assyrian Dictionary*, Parts I-III (London, 1868-72).

- Johann N. Strassmaier, *Alphabetisches Verzeichniss der assyrischen und akkadischen Wörter*, 6 parts (Leipzig, 1882-86).
- Friedrich Delitzsch, *Assyrisches Wörterbuch zur gesamten bisher veröffentlichten Keilschriftliteratur*, I.-III. Lieferung (Leipzig, 1887-90).
- Rudolf E. Brünnow, *A Classified List* (Leyden, 1889).
- William Muss-Arnolt, *A Concise Dictionary of the Assyrian Language*, 19 parts (Berlin, 1894-1905).
- Friedrich Delitzsch, *Assyrisches Handwörterbuch* (Leipzig, 1896).
- Rudolf E. Brünnow, *Indices zu meiner "Classified List"* (Leiden, 1897).
- Bruno Meissner, *Supplement zu den assyrischen Wörterbüchern* (Leiden, 1898).
- Gert Howardy, *Clavis cuneorum* (Lipsiae, 1904—).
- Hermann Ranke, *Early Babylonian Personal Names* [of the Hammurabi dynasty] (Philadelphia, 1905).
- Knut L. Tallqvist, *Neubabylonisches Namenbuch* (Helsingfors, 1905).
- Charles Fossey, *Contribution au dictionnaire sumérien-assyrien* (Paris, 1907).
- Bruno Meissner, *Seltene assyrische Ideogramme* (Leipzig, 1910).
- Albert T. Clay, *Personal Names from Cuneiform Inscriptions of the Cassite Period* (New Haven, 1912).
- Anton Deimel, *Pantheon Babylonicum* (Roma, 1914).
- Knut L. Tallqvist, *Assyrian Personal Names* (Helsingfors, 1914).
- Carl Bezold, "Historische Keilschrifttexte aus Assur. Zettelproben des babylonisch-assyrischen Wörterbuchs der Heidelberger Akademie der Wissenschaften," *Sitzungsberichte der Heidelberger Akademie der Wissenschaften*, Band VI, 8. Abh. (Heidelberg, 1915).
- Carl Bezold, "Babylonisch-assyrisch *alāku* 'gehen.' Zettelproben des babylonisch-assyrischen Wörterbuchs der Heidelberger Akademie der Wissenschaften," *Sitzungsberichte der Heidelberger Akademie der Wissenschaften*, Band XI, 16. Abh. (Heidelberg, 1920).
- Carl Bezold, *Babylonisch-assyrisches Glossar* (Heidelberg, 1926).
- Ant. Saubin, *Lexique assyrien-français* (Paris, 1928).
- Ferris J. Stephens, *Personal Names from Cuneiform Inscriptions of Cappadocia* (New Haven, 1928).
- Anton Deimel, *Šumerisches Lexikon*, 2d ed. (Roma, 1930—).
- Bruno Meissner, *Beiträge zum assyrischen Wörterbuch*, I-II (Oriental Institute, "Assyriological Studies," Nos. 1 and 4 [Chicago, 1931-32]).

All honor to the tireless devotion of the men who produced these invaluable tools, without which our present knowledge of the early civilizations of Western Asia would have been impossible! De-

litzsch's *Handwörterbuch* will long continue to be indispensable on the table of every orientalist. This and its predecessors and supplements will always remain impressive monuments to the scholarship and devotion of the great orientalists whom we gratefully revere as their authors. The remarkable advance in the technique of dictionary-writing during the last generation, however, lays a new obligation upon the shoulders of this generation of orientalists. Such a monumental dictionary enterprise as the great Murray dictionary of the English language, at Oxford, has contributed to demonstrate more and more conclusively that all dictionaries must be written on the basis of a fundamental principle long casually recognized and sporadically employed by students of language.

As far back as the year 1857 the [British] Philological Society passed a resolution to compile a new English dictionary which should "begin at the beginning and extract anew typical quotations for the use of words from all the great English writers of all ages. . . . Several hundred readers accordingly entered on the task of selecting and transcribing these quotations . . . till upwards of two million quotations had been amassed."³ By 1882 about three and one-half million quotations were on hand. The editors determined to illustrate the growth and development of the English language "by a series of quotations ranging from the first known occurrence of the word to the latest."⁴ It will be seen from these statements of the method adopted by the editor and his collaborators that the meanings of all English words were to be determined by usage as a matter of history. It was recognized that in both form and meaning each word in the language had a history, and sometimes a very long history, at least long for English, so that the meaning in one century might diverge noticeably from that in another. The meaning in each case was to be derived from the context, necessitating the collection of "quotations." The word was to be judged and appraised in every case from a study of the context.

The decisive value of the context, recognized by the distin-

³ *A New English Dictionary*, ed. James A. H. Murray, Vol. I (Oxford, 1884), Preface to Part I (dated 1883), p. iii.

⁴ *Ibid.*, p. v.

scholars co-operated for over a generation under the general editorship of Adolf Erman of Berlin, from the first employed this system, which is best illustrated by the accompanying reproductions of its cards (Figs. 198-99). It was possible for the editor of the Oxford dictionary to enlist the aid of hundreds of collaborators in excerpt-

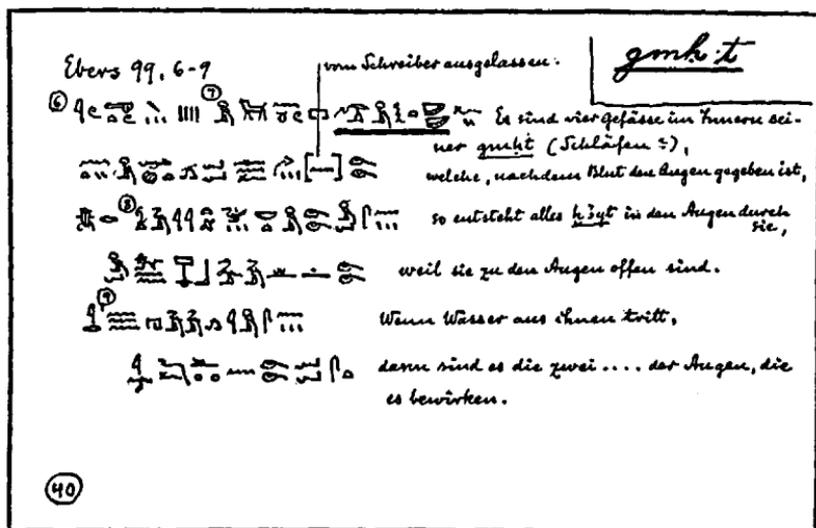


FIG. 199.—EGYPTIAN DICTIONARY CARD AFTER BEING MARKED BY THE EDITOR FOR FILING

The editor has underscored the last noun in the top line of the original text. He has likewise inserted a transliteration of this word in the blank space provided for it in the upper right-hand corner (see Fig. 198). The card is now ready for filing, its place in the alphabetic files being determined by this cue word. A similar card is filed for each word in the paragraph of original text.

ing the quotations from documents in the English language. This is, of course, impossible in the case of an ancient language such as Egyptian or Assyrian. The Egyptian dictionary had to be made an international enterprise. Among its collaborators were orientalists of Austria, Denmark, England, France, Germany, Holland, Ireland, Russia, Sweden, Switzerland, and America.

In preparing a given Egyptian document for use in this dictionary the collaborator divided the document into coherent paragraphs of about thirty words each. Each paragraph of the original text was then written out by the collaborator on the left-hand half of a card, with the text divided into clauses; the translation, placed on the right-hand half of the card, corresponded clause for clause with the original. The collaborator wrote this card with lithographic ink, so that it might be manifolded by the printer in facsimile. The printer furnished as many copies of each card as there were words in the paragraph, with a few more for use in case of accident, making, let us say, forty cards such as the reader sees in Figure 198. Taking these forty cards, the editor underscored the first word of the paragraph and inserted that same word in the blank left for this purpose in the upper right-hand corner. For this purpose a transliteration in Latin letters was used, as seen in Figure 199. It was the "cue word" under which the card was alphabetically filed. This same process was then carried out for the second, for the third, for the fourth, and so on for all the remaining words of the paragraph, with the result that every word in the paragraph was eventually filed, together with its context. It will be seen that a word at the beginning or end of the paragraph may lack the preceding or following context. In such a case a translation of the adjoining context or an indication of its purport would be inserted by the collaborator before the card was manifolded.

When the filing was completed and all the documents of the language had been thus incorporated into the alphabetically organized materials, the final editing of the work and the writing of the articles on the successive words could be undertaken. The editor then had before him every known occurrence of a given word, from the Pyramid Age down to the Christian era, a period of over 3,000 years. In its successive meanings, as these developed from century to century, and in its forms as modified by centuries of phonetic change, the history of the word thus stood revealed, so that the editor was in position to write as final and decisive an article concerning the word as the surviving materials of the language permitted.⁵

⁵ The preceding account of oriental dictionary-writing is edited from the author's discussion in "Oriental Institute Communications," No. 1, pp. 56-64.

This great Egyptian dictionary, begun in 1897, required the filing and study of some one and a half million slips, and occupied its editors and collaborators for nearly thirty years before any of it was ready for the printer. The first volume appeared in 1926, the fifth and last in the autumn of 1931, thirty-four years after the beginning of the project. It is the first dictionary of an ancient oriental language based on practically the whole body of original sources.

The plans of the Oriental Institute for an Assyro-Babylonian dictionary have been built up on the basis of past experience as accumulated especially in the compilation of the two dictionaries mentioned above. It was evident in making these plans that the work of a single devoted scholar, such as had produced the Assyrian dictionaries of the past, must be expanded and carried on by a permanent central staff, assisted by a group of outside collaborators. This entire personnel must furthermore be supplemented by mechanical equipment, especially for manifolding and filing, so as to reduce the clerical and manual labor to a minimum. Professor D. D. Luckenbill, Assyriologist of the University of Chicago and of the Oriental Institute, was appointed to take full charge of the project. Dr. John A. Maynard was made secretary of the Assyrian Dictionary staff. To assist these gentlemen two graduate students of the Department of Oriental Languages and a stenographer were assigned to the work of the Dictionary, making a resident staff of five people. As non-resident collaborators the Oriental Institute was fortunate in securing the co-operation of Professor Leroy Waterman, of the University of Michigan, Professor S. A. B. Mercer, then of Western Theological Seminary, and Professor Theophile J. Meek, then of Meadville Theological Seminary. It is perhaps worthy of mention that with one exception all of the first Dictionary staff, resident and non-resident, were doctors or students of the Department of Oriental Languages in the University of Chicago.

The system of work which was developed under Professor Luckenbill's direction was in operation by October 1, 1921. Paralleling the Egyptian dictionary described above, it was planned to incorporate into the files of the new Assyrian Dictionary, for the first time in such an enterprise, all the Semitic cuneiform documents

available.⁶ In preparing this material for the files the resident staff at first furnished the bulk of the cards, making a large nucleus and developing all the details of the system on the basis of which, and in conformity with which, the collaborators have been able to carry on their translation work with accuracy and precision from the start. As in the Egyptian dictionary, each document is divided into a series of paragraphs. In the case of the cuneiform documents these usually contain not more than about forty words. When the document has been so divided and each paragraph has been supplied with a careful literal translation, the correctness of which has been checked by the most experienced scholars of the Dictionary staff, the pages or sheets containing this material are mounted in a "Line-a-Time" rack, in which a marker clearly indicates to the operator the successive lines to be copied. At this point the Assyrian Dictionary enjoys a great advantage over the Egyptian: the Egyptian hieroglyphic had to be *hand-copied*, whereas for the Assyrian a transliteration into Latin letters is sufficient, without reproducing the signs of the cuneiform original. Special types have been cut by the typewriter manufacturers, furnishing all the special signs and diacritically marked letters needed for exact transliteration of the cuneiform. It is thus possible to typewrite all the copy for the Assyrian dictionary cards (Fig. 200). Manifolding was done at first with the slow and inconvenient hectograph; but, after Professor Luckenbill's death, Professor Chiera found that improvements in the mimeograph made it quite feasible to employ this more rapid and convenient apparatus. Each stencil accommodates three cards (or "quotations," as the Oxford dictionary editors would say). In general the arrangement of the material on the card is like that employed in the Egyptian dictionary explained above. The transliteration of the cuneiform text is written at the left, the corresponding translation at the right (Fig. 201).

After being manifolded, so that forty copies of each paragraph or "quotation" are available, the cards must be prepared for filing. If a document contains twenty-five paragraphs, these twenty-five with their translations now fill a thousand cards. As explained

⁶ Hitherto no systematic effort has been made to include the Sumerian or any other non-Semitic language written in cuneiform. Cf. p. 397.



FIG. 200.—HEADQUARTERS OF THE ASSYRIAN DICTIONARY. MEMBERS OF THE RESIDENT STAFF AT WORK

The typists are copying Assyrian texts and translations on mimeograph stencils for manifoldng. One typist does only transliterated texts, while another does only the translations. In the background are steel filing cases containing at present about 1,500,000 cards like those in Figure 202.

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in discussing the Egyptian dictionary, a member of the staff takes each paragraph, now available in as many copies as it contains words, and underscores the first word on the first card, the second word on the second card, and so on. At the same time the word underscored is also entered by hand in the upper left-hand corner. This cue word insures the filing of the card in its proper place in the alphabetic files. When so prepared, each of the thousand cards appears as in Figure 202 and is ready for filing.

Following the lamented death of Professor Luckenbill in June, 1927, the Institute was fortunate in securing the scholarly services of Professor Edward Chiera as his successor in the management of the Dictionary project. Meantime Dr. Maynard had left Chicago in 1923, and his place as secretary of the Dictionary staff had been taken by Dr. F. W. Geers. As the mass of materials grew it became more and more evident that additional assistance must be made available. The new teaching endowment provided in 1928 (p. 108) made it possible to invite Professor Arno Poebel of the University of Rostock to come to the Institute as professor of Sumerian. The following year Dr. Arnold Walther of the Staatsmuseen in Berlin was also called to join the resident staff. At the same time Professor Bruno Meissner of Berlin agreed to furnish a series of contributions to our new "Assyriological Studies," and invitations to collaborate were sent to a group of other European and American scholars.

Of those who accepted, the following collaborators have already completed their assignments: Professors Raymond P. Dougherty, Erich Ebeling, Ira M. Price, and Franz X. Steinmetzer and Mr. Cyril J. Gadd. Dr. John A. Maynard and Dr. Maude Allen Stunneck, formerly with the resident staff, continued as collaborators after they had removed to other institutions. They also have completed their assignments, as have the early collaborators, Professors T. J. Meek, S. A. B. Mercer, and Leroy Waterman. Collaborators who are sending in contributions at the present time include Dr. Martin David, Dr. Joseph Denner, Dr. Georges Dossin, Dr. Wilhelm Eilers, Professor P. C. A. Jensen, Dr. Oluf Krückmann, Professor Benno Landsberger, Professor Stephen H. Langdon, Professor Julius Lewy, Miss Ellen Moore, Professor Otto Neugebauer, Professor Otto E. Ravn, Dr. Joseph Schawe, Dr. Albert Schott, Dr.

	VS 3 No. 154.
<p>1) 1 GUR uṭṭati ^mba-ab-ru (2) māru šá ^mri-mut-^dnabū(?) apil ^mardi-^dnergal (3) ina uṭṭati-šú šá ina muḫ-ḫi (4) ^mdbēl- ri-man-an-ni māru šá (5) ^mmu-šib-ši- ^dmarduk apil ^{am}šangi ^dšamaš (6) ina qāt? ^mdbēl-ri-man-an-ni ma-ḫir (7) e-lat giṭṭāni(G1D.DA)^{pl} maḫrū-tú (8) ištān^{en}- a-an il-te-qu-ú (9) ^{am}mu-kin-nu ^mdšamaš-ú - - - ni (10) apil-šú šá ^mu-qu-pu ^diddina-^dbēl</p>	<p>(1) 1 GUR of barley Hahru, (2) son of Rimut-Nabu(?), desc. of Ardi- Nergal, (3) of his barley which is charged against (4) Bel-rimananni, son of (5) Mushiḫshi-Marduk, desc. of the priest of Shamash, (6) from the hand of Bel-rimananni has re- ceived. (7) Aside from former receipts. (8) One (document) they each have taken. (9) Witness(es); Shamash- (10) son of Uqupu; Iddina-Bel, (son of Nabu-iddina)</p>

FIG. 201.—MANIFOLDED CARD OF THE ASSYRIAN DICTIONARY BEFORE EDITING

This card contains a paragraph of a cuneiform text in transliteration (left), a translation of the same paragraph (right), and a citation indicating the source of the paragraph (upper right corner).

	VS 3 No. 154.
<p><i>maḫir</i></p> <p>1) 1 GUR uṭṭati ^mba-ab-ru (2) māru šá ^mri-mut-^dnabū(?) apil ^mar<i>gi</i>-^dnergal (3) ina uṭṭati-šú šá ina muḫ-ḫi (4) ^mdbēl- ri-man-an-ni māru šá (5) ^mmu-šib-ši- ^dmarduk apil ^{am}šangi ^dšamaš (6) ina qāt? ^mdbēl-ri-man-an-ni <u>ma-ḫir</u> (7) e-lat giṭṭāni(G1D.DA)^{pl} maḫrū-tú (8) ištān^{en}- a-an il-te-qu-ú (9) ^{am}mu-kin-nu ^mdšamaš-ú - - - ni (10) apil-šú šá ^mu-qu-pu ^diddina-^dbēl</p>	<p>(1) 1 GUR of barley Hahru, (2) son of Rimut-Nabu(?), desc. of Ardi- Nergal, (3) of his barley which is charged against (4) Bel-rimananni, son of (5) Mushiḫshi-Marduk, desc. of the priest of Shamash, (6) from the hand of Bel-rimananni <u>has re- ceived</u>. (7) Aside from former receipts. (8) One (document) they each have taken. (9) Witness(es); Shamash- (10) son of Uqupu; Iddina-Bel, (son of Nabu-iddina)</p>

FIG. 202.—MANIFOLDED CARD OF THE ASSYRIAN DICTIONARY AFTER EDITING

The editor has inserted in the upper left-hand corner the cue word by which the card is to be filed. Both the word itself (*maḫir*) and its translation ("has received") are underscored.

Wolfram von Soden, and Professor Ephraim A. Speiser. Materials sent in by European collaborators are arriving almost every week.

At this writing, after the Dictionary project has been in operation for eleven years, the steel filing cases (see Fig. 200) contain about 1,500,000 cards, covering almost completely the following classes of materials:

- Historical texts
- Politico-religious texts
- Creation stories
- Incantations (Semitic and bilingual)
- Law codes (Babylonian and Assyrian)
- Legal texts (New Babylonian)
- Boundary stones
- Economic documents (Kassite and New Babylonian)
- Letters (Old Babylonian, Tell el-Amarna, Assyrian, and New Babylonian)
- Chemical texts (very few)

Of the following classes of materials larger or smaller portions have already been received from the scholars whose names are appended:

Religious literature	von Soden
Hemerologies and wisdom literature	Langdon
Epics and myths	Speiser
Rituals	Jensen
Liver omens	Denner
Omens from everyday occurrences	Ravn
Legal texts (Old Babylonian)	Krückmann
Legal texts (Assyrian)	David
Cappadocian tablets	Lewy
Economic documents (Persian and Seleucid)	Moore
Letters (Old Babylonian and Kassite)	Schawe
Syllabaries	Landsberger
Mathematical texts	Neugebauer
Astrological texts	Schott
Elamite business documents	Dossin
Nuzi tablets	Chiera
Old Akkadian texts	Poebel

It is obvious that the present body of some 1,500,000 alphabetically organized cards in such an impressive array of steel drawers does not in itself constitute a dictionary; the cards merely embody the *materials* from the study of which the dictionary articles will be written. At this preliminary stage, however, such organized materials are of the greatest value in the study of the history of civilization. In carrying on his courses of instruction in ancient oriental history in the Institute, Professor A. T. Olmstead and his students have made extensive use of these materials, as indicated in his report:

In many respects the Assyrian Dictionary materials are proving to be of more value for their by-products than for simple dictionary purposes. The filing of all the cards with full context in one drawer permits an examination of all the material hitherto gathered on any one subject. For example, under *ardu*, "slave," we find all the material available for any desired study on slavery. From this material we can discover the status of the slave, any change in his condition, changes in prices, or the relative values of male and female slaves and slave children. A considerable number of such studies have already been made and have permitted important conclusions even with the relatively small amount of material available. Thus Mr. Alan Albert, Jr., has studied a group of words dealing with cities, such as the words for "city" itself and for streets, paths, and the like. The investigation of groups of words dealing with city administration, taxation, finance, and the like is now under way.

The indexes of proper names are of the greatest value. Already it has been possible to date many letters from the Neo-Babylonian period by the occurrence in them of officials' names and titles in just the same combinations found in dated business documents from the same site. It has been possible to study the careers of some of these officials and to trace their rise to higher positions. A future study will investigate the religious data to be secured from the proper names as to the gods who were worshiped in the various periods and the religious ideas represented in the names.

The geographical index is equally important. From this index it is now possible to collect all the material available for the history of any given country of major importance. For instance, when Mr. Bertram Thomas, the author of *Arabia Felix*, recently visited the Dictionary, we could give him immediately all the evidence in cuneiform literature referring directly to Arabia, to cities of Arabia, or to Arabs. The fact that the cards collected under each place-name give all available information in regard to that

place makes it possible at once to discover whether this material can prove the exact location of a given site.

Another valuable use of the Dictionary is in restoring ancient original cuneiform texts now broken and fragmentary. With the aid of parallel passages, easily found through the Dictionary, it was possible to make considerable restorations in the text of Sargon's annals. A similar restoration of the annals of Tiglathpileser III is now virtually complete. The Dictionary has also been of use to Dr. A. C. Piepkorn in identifying Oriental Institute fragments of prisms of Assurbanipal (cf. p. 365), whose records form the subject of his doctoral dissertation.⁷

The catalogue of the months has already been used to discover how many days each Babylonian month contained in different periods.

Professor Olmstead further reports that during the last year various other studies based on Assyrian Dictionary materials have been carried on in his seminar in oriental history:

The Dictionary has recently received a set of translations of all the Babylonian charters. These were examined by the members of the seminar. Not only could the charters be better understood than before, but much light has been thrown on administration and taxation. The chief activities of the seminar have been devoted to Neo-Babylonian material. First the official inscriptions of the Chaldean monarchs were worked through, with considerable additions to our knowledge. The numerous Neo-Babylonian letters were studied for direct connection with the Neo-Babylonian business documents. Although these documents had been prepared for the Dictionary by eminent Assyriologists, considerable advances were made in translation, due to the fact that the interest of the seminar was primarily in *facts*. Among the so-called "Neo-Babylonian" letters were found nine undoubtedly Assyrian letters, of which three can be safely ascribed to the last year of Esarhaddon and six to the reign of Assurbanipal. Other letters were assigned with certainty to Nebuchadnezzar, both as crown prince and as king, and to Nabunaid. The seminar found also a letter, quoted from Cambyses, which exactly parallels the formula found at the end of the rescript of Darius I in the Book of Ezra.

Under the direction of Mr. W. H. Dubberstein, one of the fellows of the Institute, all the documents for the Chaldean and Persian periods were arranged in chronological order, year by year. Mr. Dubberstein then studied these documents in chronological order. He has already established the normal interest rate of 20 per cent per annum through these periods and has

⁷ Now in press as No. 6 of the Oriental Institute's "Assyriological Studies."

shown why we have certain variations. He has also worked out a series of price levels, based primarily on two commodities, barley and dates, but with the inclusion of all other priced commodities. When these studies are carried backward through the older literature, we shall have a series of price levels for 3,000 years, a range for which there is not even a near parallel in known economic history. Mr. Dubberstein has found evidence toward the end of the fifth century B.C. of an economic crisis which resulted in the doubling of the interest rate, a sharp rise in prices, and a change in the relative values of silver and gold. He has also studied administration and taxation, and we are beginning to discern the transition from the older Babylonian system to the Persian administration.

In connection with the Assyrian Dictionary and with the utilization of its mechanical resources various dictionaries to cover related but much more restricted fields have been begun by the fellows and graduate students of the Institute. These include Old Persian in the cuneiform sources, pre-Christian Aramaic, and Phoenician with the newly deciphered Ras Shamra tablets.

Dr. George G. Cameron, a fellow of the Institute, has already completed a dictionary of Old Persian as found in the cuneiform inscriptions. It has been possible to make several new restorations on the basis of this collection. A full set of texts and translations has been presented to our colleague, Professor Carl D. Buck, for use in his Persian studies. Dr. Cameron carried on this work in connection with preparation of his thesis, a history of pre-Achaemenid Persia. Dr. Cameron has now begun a dictionary of Elamite, which is still largely undeciphered. This decipherment should be considerably advanced when all the Elamite material is brought together in dictionary form, with every occurrence of every word in the full context. It is hoped that similar dictionaries may be prepared for the still relatively small amount of material available for other Caucasian languages.

Mr. R. A. Bowman is preparing a dictionary of pre-Christian Aramaic which will contain the biblical Aramaic passages, the Elephantine papyri, and the various Aramaic inscriptions of pre-Christian date. He will also include in this dictionary all Aramaic personal and place-names found in the Assyrian inscriptions, since these are easily checked by the indexes of the Dictionary. It is hoped that through this compilation new light will be shed on the Aramaic of the Bible and particularly on the date of the documents there included.

Mr. W. G. Williams has begun a dictionary of Phoenician which will include the newly deciphered Ras Shamra tablets and all the material in the Phoenician inscriptions. It is expected that this will throw considerable

light on Hebrew literature, as Phoenician is little more than a dialect of Hebrew.

It may be confidently expected that the carrying out of this program of preparing dictionaries of small groups of documents, with the use of the mechanical facilities of the Assyrian Dictionary, but under the direction of independent workers, will result in a considerable increase of our knowledge both of little known languages and also of the related history. Most of these attempts to utilize the Dictionary for historical by-products were begun only within the last year, and much more important results should be secured in the years immediately to follow.

There can be no doubt but that the files of the Assyrian Dictionary will continue for many years to be a rich mine of material for historical investigation. Nowhere does modern oriental research possess such a mass of organized material covering so long a period and touching so many phases of human activity. In the light of results already secured it is certain that important, perhaps even spectacular, additions will be made to social and economic history; and it is not impossible that discoveries yet to be made will profoundly affect even the theories of the social sciences.

One of the chief sources of complication in the development of the Dictionary is the wide geographical range and long history of the linguistic materials to be treated. We are all familiar with the fact that early examples of our own English are difficult to understand; yet the linguistic changes causing these difficulties have resulted from the lapse of only a few centuries. The cuneiform literature extends over nearly 3,000 years. The Akkadian of the early third millennium B.C. is, of course, very different from that found in the late texts of the Persian and Greek periods. "In fact," says Professor Chiera, "the changes are so very great that the early texts will have to be filed separately, since they would cause confusion in the main file."

Professor Chiera continues:

The wide geographic distribution also makes it very difficult to file together documents that belong to the very same period. The so-called "Cappadocian" tablets, found in Anatolia, show that the mercantile settlements of Babylonians and Assyrians in Asia Minor spoke a language very different from that disclosed by tablets found in Persia. The Nuzi tablets, dated about 1500 B.C., also need special treatment, as do the Tell el-Amarna tablets, which have been influenced by various dialects. As excavations

continue, more and more of these special groups will be discovered and will require separate treatment.

Besides the Akkadian (Assyro-Babylonian) language proper we have found it necessary to have several small files for foreign languages that were written in cuneiform or were influencing the cuneiform language. An Old Persian file prepared by Dr. Cameron, a file of Elamite which he has undertaken, an Aramaic file in preparation by Mr. Bowman, and one of Phoenician (including the Semitic dialect of the Ras Shamra tablets) by Mr. Williams have been discussed earlier in this chapter. A non-Semitic language of unknown linguistic affiliations, used in a few Ras Shamra texts, is being studied by Dr. Gelb, along with the Hurrian language, which is frequently used in the Nuzi tablets.

It was the policy of the Dictionary from the very beginning not to include any Sumerian texts, but to limit itself to the Akkadian. However, many of the texts, especially of the older periods, are written in a language which is very much mixed; hence it has happened that a good many individual Sumerian words were filed. Moreover, even in the texts of later periods Sumerian technical words continued to be used in many cases. Those also were filed. The so-called "ideographic" method of writing words has in itself caused a very large addition to the number of cards containing Sumerian words.

For a complete dictionary of the Akkadian language we shall have to indicate what Sumerian ideograms were used in the writing of each word. Hence it will be necessary to compile a complete list of the signs by means of which any word may be rendered. Also, since the same Sumerian sign has different phonetic values, we shall have to determine which one of those phonetic values was intended in any given word. This is a task which has never been done carefully; in some cases it has never been done at all. In this respect we hope our Dictionary will achieve a very definite advance over all its predecessors.

Since we thus have to study a certain amount of Sumerian in order to have a good Assyrian Dictionary, a special assistant will work under Professor Poebel, giving attention to these materials. After we have carefully gathered long lists of Sumerian words and ideograms, we could either leave this material on file for future reference or use it as a basis for a Sumerian dictionary, which is very badly needed and could well be undertaken by our trained staff.

The newly discovered original sources coming in from the field form a very large body of materials. Among these, mention should

be made of the great series of tablets discovered by Professor Chiera at Nuzi (see p. 365). He says of them:

All the words occurring in the Nuzi tablets will be incorporated in the Assyrian Dictionary. This will be an entirely new field upon which previous dictionaries have never touched; yet a good-sized dictionary could be written in that field alone. Hundreds of tablets to be read have been sent us from Harvard, and a thousand more are waiting. Considering that the Nuzi tablets being studied in the Oriental Institute at present far outnumber those which have already been published, it happens that we here are in a position to give the final word on almost all questions which arise concerning their interpretation. This would be the case, even had we not in our possession such a great number of unpublished texts, because we have already carefully studied and placed on cards all the words contained in the whole published group.

Among the new materials are also the 1,400 tablets discovered at Eshnunna by Dr. Frankfort and the group found by Dr. Schmidt and Dr. von der Osten at Alishar. It is certain that the Iraq Expedition will continue to discover new tablets, and it is not impossible that cuneiform documents may be found by the Megiddo Expedition and the Syrian-Hittite Expedition also. Such periodic discoveries raise a serious question with regard to the magnitude of the task still before the editors. Professor Chiera reports:

We have computed that, counting texts already in the files, those already published, and those which are expected to appear within the next five years, we shall have altogether about 2,500,000 cards. At our previous speed it would have taken a very long time to finish this first part of the work. At present, with the help of the men who have recently been added to the staff, I should say that the rough forecast of another five years for the cards can be reduced to some extent. We shall do our very best to cut that figure as much as we can.

Dr. Chiera's mention of new helpers refers to an enlargement of the resident staff arranged last year and intended to make it possible to do more rapidly the preparatory work on the translations now coming in from Europe in such large volume. There are now eight research assistants: Dr. S. I. Feigin, Dr. Ignace J. Gelb, Dr. S. N. Kramer, Mr. Waldo H. Dubberstein, Mr. Richard T. Hallock, Mr. Alexander Heidel, Mr. Ernest Lacheman, and Mr. Robert

L. Sage. The clerical force at present includes Miss Janet Rae, Mr. Alfred Schmitz, Miss Erna Schroeder, and Miss Mary E. Switzer.

From the beginning the endeavor has been to speed up at the points in the dictionary processes where the slowest rate was observable. For the special problems of the Assyrian Dictionary we are obliged to move as admonished by our own experience. The eight research assistants are now working at a point which might be called a bottle neck, where there was a heavy congestion, and it is already observable that this congestion is disappearing. We may therefore confidently expect that *within five years* the enormous body of written documents, chiefly in the form of clay tablets, left by early man throughout Western Asia from Persia to the Mediterranean and the Aegean (in so far as these materials have been excavated), will for the first time be filed in organized form for systematic use not only in the preparation of a dictionary of cuneiform but also in the study of the development of early civilization.

How long a period may be necessary for writing the thousands of articles or word-treatments based on this huge body of alphabetically organized "quotations," it would be hazardous to conjecture; for it is not easy to determine in advance even the number of words which the dictionary will contain. Of the existent dictionaries rough estimates show that Delitzsch has some 6,200 words, Bezold 10,100, and Muss-Arnolt 13,700. It is certain that the Institute dictionary will enormously exceed these totals. The cards thus far filed (about 1,500,000 in number) represent 17,840 words. Regarding this question Professor Chiera says:

Even if future additions should bring the total up to about 20,000, such figures would not convey an adequate idea of the number of words covered by the Dictionary. The various forms of the verbs have different meanings, and each form will have to be studied separately. Moreover, we have to deal with a literature which is, to a very large extent, varied in character and which covers a very long period of years. Words used in historical inscriptions, for instance, will have meanings different from those of the same words used in omens, law, astronomy, and what not. They will also change within the very same group with the passing of centuries. Considering all this, a thorough treatment of each word will require much more space than

would be needed had we one language belonging to one period and having a relatively poor literature. Then, too, the two groups of Cappadocian and Nuzi tablets, which have been either imperfectly treated or not treated at all in other dictionaries, will require an enormous amount of space. In all preceding dictionaries very little attention has been given to Sumerian ideograms and loan words. Since we have here the first professor of Sumerian, it will be our duty to handle this part as thoroughly as the exigencies of the case necessitate. This also will increase the work and the space required for the Dictionary.

Assuming that this dictionary will contain 20,000 words, it is not difficult to compute its prospective size in volumes. The Delitzsch dictionary contains an average of seven words to the page, and 20,000 words would therefore make nearly 3,000 pages, or six volumes of 500 pages each. With perhaps sixteen years altogether to be devoted to the carding of the texts, an indefinitely long period to be required for the preparation of the word-treatments, and further years to be needed for publication of six large and highly technical volumes, the outstanding magnitude of the Assyrian Dictionary project becomes somewhat easier to visualize.

CHAPTER XVIII

CORRELATION PROJECTS AND MISCELLANEOUS RESEARCHES

From the beginning, one of the fundamental intentions in the organization of the Oriental Institute has been the establishment of as close a correlation as possible between the administrative headquarters and the operations in the field. In actual practice such correlation would necessarily assume a number of different forms. It is hoped that eventually the field work may be so planned as to permit the field directors, possibly at the rate of one or two each year, to come to Chicago, work and confer for a time with the home staff, and deliver a few lectures on the results in the field. It would also be of great value if some of the members of the home staff could visit the field expeditions. Among other important reasons, financial considerations have thus far made it impossible for the Institute to inaugurate this plan.

As far as possible the Director's correspondence with the field directors is intended to promote scientific correlation. A certain degree of it is developed in the work of the Institute's editorial office, especially in its correspondence with the field directors regarding the publication of their reports, preliminary and definitive (see chap. xix).

ORGANIZATIONS OF MATERIALS AND SOURCES

Personal co-operation is easier than the scientific interfusion of facts, observations, and results into one coherent whole. The original monuments and other source materials excavated in the field and shipped by the expeditions to the American headquarters form, of course, a constant bond between field and home research. It was planned from the beginning that the researches of the home staff should be continuously fed by original sources coming in from the

field; but the fusion of these sources and the facts which they reveal into one whole, so organized that its entire content shall be easily accessible—that is a large and difficult task. This process is well illustrated by Professor Chiera's important excavations at Nuzi (not an Oriental Institute project) and his discovery there of a great mass of cuneiform tablets which are now in Chicago for study. As soon as these sources are incorporated into the Assyrian Dictionary, every fact they reveal will be easily and quickly accessible. The same will be true of the 1,400 tablets discovered by Dr. Frankfort at Eshnunna. On the other hand, for cataloguing the *archeological* materials discovered in such great quantities in the field, the Institute has no organization parallel with the Assyrian Dictionary staff.

The Archives and the Archeological Corpus.—The writer considered that a practical method for producing some degree of correlation of materials both old and new would be the compilation of an encyclopedic index. On a limited scale this work began with the organization of the Institute in 1919. In so far as such an index was bibliographical, it could be compiled by a librarian in accordance with library practice. It was not until the summer of 1924, however, that the Institute was able to appoint a trained librarian in the person of Miss Johanne Vindenas. She now has two assistants, Miss Asgerd V. Skjønberg and Dr. Margaret Boell. The services of a trained library staff made it possible to proceed more effectively with the organization of the "Archives," as the proposed compilation was designated.

Apart from book cards and other usual contents of a library catalogue, one of the most important parts of the work as planned has been the analyzing of periodicals. On this work Miss Vindenas reports:

Periodicals analyzed fall into two groups: those which deal exclusively with subjects in the Near East field, and those which touch it only occasionally or in part. Each article analyzed is treated in full like a book, making it accessible under both author and subjects. The system of subject headings and subdivisions worked out by the Library of Congress is followed, with such few modifications and elaborations as prove necessary. Notes on contents are usually added if required to explain the title. All

work is revised to obtain as high a degree of accuracy as possible. Book reviews are listed after the work reviewed, with a memorandum (limited to volume reference) under the name of the reviewer. For the present we have limited our analyses of periodicals to volumes which have appeared after 1900, instead of completing certain sets. This means that a larger group of periodicals is being analyzed than would otherwise be possible under the present circumstances.

Besides numerous publications available in other libraries only, the greater part of Dr. Breasted's personal collection also can be found represented in the bibliography. This means that his valuable library, some volumes of which are not in the Oriental Institute collection, is accessible to the whole faculty and staff of the Oriental Institute.

Today the catalogue contains about eighty-five thousand cards, while the number of books shelved in the Oriental Institute library is about eight thousand. Larger results might have been attained had not much of the time of the Institute's library staff been taken up by other duties (many of them belonging rather to the general library administration of the University than to the Institute) such as attending to the loan desk and reading-room, tracing books and references for the faculty and staff, etc.

The catalogue thus produced by our librarians is becoming more and more an indispensable tool for all research workers in the field of the Near East. In physical form this catalogue is of course a *card index*, so organized that its subject entries include the leading rubrics in the cultural development of man, especially before the rise of historic Europe, but also later. Ideally conceived, the contribution of each item recorded would be summarized on its cards, so that, when exhaustively compiled, the cards under each rubric would be the basis for a complete organization of the discernible relevant facts and materials, drawn not only from publications but also from unpublished original monuments and sources. In fact, already in some instances summaries of contents and unprinted data have been embodied in this file.

With the expansion of the scientific staff it was hoped to develop the plan more fully by supplementing this catalogue with a definitely archeological corpus. The history of the project up to this point demonstrated that the task was far too considerable to be carried out by the library staff, involved as they were in the daily duties of library routine. Moreover, if the whole process was to be

scientifically developed, its operation would require more technical and highly specialized knowledge of the subject matter than could justly be expected of our librarians. The Director of the Institute eventually called together a committee representing the leading ancient civilizations with which the Institute is occupied. It included Dr. A. T. Olmstead (chairman), Dr. T. George Allen, Dr. Watson Boyes, Dr. Edward Chiera, Dr. William F. Edgerton, and Dr. Arno Poebel. The committee was assisted in its work by Dr. George G. Cameron, a fellow of the Institute, as secretary.

After several conferences the committee was asked to render a report on the whole Archeological Corpus project. The more important items of that report are as follows:

The main factors involved in the corpus would include (1) selection and source of content, (2) the form in which the material chosen would be recorded, and (3) the arrangement of the records. . . . Sources of material for the corpus should include primarily the discoveries of our own expeditions and those of other scientifically conducted expeditions in the Near East, in so far as accessible, whether through publication or otherwise. . . . In utilizing published material the first step is to find what is available. Hence the committee would suggest the compilation of an index of references to all suitable material which has been definitively and adequately published. Such an index might acquire additional value by the inclusion of references to other important material inadequately published.

. . . Each card (5×8 inches) should carry an illustration of the object concerned or, if a detail, of that detail with as much context as needed. The illustration should be on a conveniently large scale, and the actual size of the original should be indicated. With the illustration should go the classification and a description of the original. An ideal description would include provenience, present location and reference number, material, and date, with reference to the source of information, either published or unpublished, and statement of additional facts (if any) involved in the dating. Any essential details of form, texture, technique, decoration, inscriptions, etc., if not clear in the illustration, should likewise be mentioned; but the illustration should be allowed to speak for itself as far as possible. In the majority of cases the actual total amount of written information required would be small. Our effort would be to make each card record as brief and concise as the requirements of the corpus would permit.

The committee's investigations . . . indicate definitely that all copying should be done by mechanical means such as photostating or photography.

This applies particularly to illustrations, which, as indicated above, would be a fundamental element in the records of the corpus. Since accuracy is the outstanding requisite, photographs and/or drawings made directly from the original would, of course, be the ideal illustrations for the corpus. Next in desirability would be photographic, photostatic, or printed copies made from such photographs or drawings as sources. Then would come similar mechanical reproductions of illustrations found in definitive publications. Preliminary publications also might serve as sources. The committee would, however, strive to avoid even mechanical copies from secondary publications. Hand copies of any sort of reproduction must be avoided, since they are liable to introduce uncontrollable variations from the original.

Though photographic prints make the clearest reproductions, the committee has convinced itself that the needs of the corpus may in part be met in less expensive ways. Its experiments have demonstrated that adequate photostats can often be made from photographs. It would often be possible, too, to have extra proofs or extra pages run off in connection with the printing of future publications of the Oriental Institute, so that such printed illustrations might be utilized without further copying. In other cases the purchase and cutting up of whole volumes published elsewhere might provide illustrations more cheaply than would even photostating.

As to arrangement of the corpus, the fundamental question is that of classification. A comprehensive, elastic, and logical grouping is to be sought. The committee feels that, in the beginning at least, it would be most convenient to have the record cards grouped region by region. The classification of material should, however, be uniform throughout all the regional sections, so that material belonging to one region may readily be compared with similar material belonging to others. The committee is convinced that this classification should be based primarily on either *form* or *use* or possibly both. Material, though often conditioning form, is of relatively subordinate significance. Date, which will often have to be determined by the aid of the corpus itself, should be subordinated in the classification.

The value of correlation such as a corpus of this kind would furnish is convincingly illustrated by the beautiful East Indian seal which Dr. Frankfort discovered at Eshnunna (see Fig. 182). Now it happens that we are all deeply interested in the discovery made by Sir John Marshall of a prehistoric civilization on the Indus; the outstanding features of the stamp seals which he found at Mohenjo Daro are therefore fresh in our memories. Dr. Frank-

fort consequently had no difficulty whatever in putting side by side the animals pictured on the seal which he had found at Eshnunna and those on the seals which Sir John Marshall had found at Mohenjo Daro. When thus placed in juxtaposition, the relationship between the two was evident. The volume of evidence left us by ancient civilizations of the Near East is, however, so vast that it is impossible for any single brain to carry the details which would make possible instructive comparison of evidences from all the different civilizations and from various groups of sources. Some form of catalogue or index is therefore indispensable. The Assyrian Dictionary in its present stage is merely an index of *words*; but we have seen that its already demonstrated usefulness, even in this unfinished stage, is a conclusive illustration of the value of such an organization of materials. Every example of a word is placed in the same division with all the other known examples of the same word thus far accumulated by the Dictionary. What the Dictionary is doing for a *language* should likewise be done for the *whole range of evidence* surviving from the ancient oriental civilizations as a whole.

Such an amount of correlation as is absolutely indispensable for the successful interpretation of the field results (for instance, Frankfort's work in the juxtaposition of the seal carvings from Eshnunna and Mohenjo Daro) can be carried on by the individual field directors and members of their staffs. Dr. Frankfort has already begun a card catalogue which is a very commendable effort in this direction. At the same time, operating as he is in the field in a region which is a great nexus of cultural influences, he has produced a fine example of correlation in his essay on *Archeology and the Sumerian Problem*.¹ Nevertheless, the writer cherishes the hope that the larger and more comprehensive plan above envisaged may eventually be carried out by the Institute.

A project of this character is one of such far-reaching scope and would be dealing with such an enormous volume of materials that the longer we have contemplated it the more obvious it has become that the work could be undertaken only by a special staff under the best expert guidance. Our experience with the Assyrian Diction-

¹ "Studies in Ancient Oriental Civilization," No. 4 (Chicago, 1932).

ary, the scope and magnitude of which were never wholly realized by Professor Luckenbill or the present writer until we were deeply involved in the effort, has demonstrated the necessity of caution in beginning such a project. The Dictionary has at present some forty people on its staff at home and abroad. Although a group of collaborators as large as this would presumably not be necessary for the work of the proposed Archeological Corpus, it is nevertheless quite clear that without a considerable increase in its budget the Oriental Institute could not undertake the plan. *The project is one of the most important in the whole range of humanistic research.* It is an urgently needed tool. The Institute is the obvious agency to produce such an encyclopedic organization of the evidences revealing the life and history of ancient man. For financial reasons alone, however, the Institute cannot at present undertake it.

The "Ancient Records" series of translations.—In order to assemble the original narrative sources of ancient oriental history, to co-ordinate them, and to make them accessible to all, it has long been the intention of the orientalist group in the University of Chicago to issue a series of translations which should eventually include all the important written sources for the history of the ancient Near East. This series was given the general title "Ancient Records," and a prospectus of the translations to be published was issued by President William Rainey Harper five or six years before his lamented death. The first instalment to be printed comprised the historical sources of Egypt from the earliest times to the advent of the Persians in 525 B.C.²

The death of President Harper, followed by that of his brother, Dr. Robert Francis Harper, necessarily resulted in the discontinuance of the plan. After the organization of the Oriental Institute, however, this series was incorporated in the plans of the Institute, and a new printing of the "Ancient Records of Egypt" was issued.

The translation of the historical records of Babylonia and Assyria for the Assyrian Dictionary made it feasible to produce very rapidly a complete corpus of the historical records of the Tigris and

² "Ancient Records of Egypt," Vols. I-V. *Historical Documents*. By James H. Breasted (Chicago: University of Chicago Press, 1906-7).

Euphrates country. Two volumes of Assyrian records edited by Professor Luckenbill³ appeared before his untimely death, as a further instalment in the realization of the comprehensive plan under Oriental Institute auspices.

It is hoped that work on the Assyrian Dictionary and related investigations may make it possible to expand the series of "Ancient Records" so as to include the Hittite materials, the Syrian and Phoenician sources, and also the extrabiblical sources for the history of Palestine.

EGYPTOLOGICAL STUDIES

The Nubian monuments.—The cessation of the epigraphic survey which was salvaging the inscriptions of Nubia from 1905 to 1907 has already been mentioned (p. 33). After the death of President Harper there were no funds available for the proper publication of the field records which had accumulated during the Nubian campaigns. The development of the Institute and the availability of archeologically trained draftsmen and artists have at length made it possible to undertake the publication of these records. The immediate task is in the hands of Dr. John A. Wilson, who is now preparing the materials for the work of the draftsmen. The results will appear in two volumes.

The Philae records.—The work of the University's epigraphic survey in Nubia was carried from the southern limit of monuments on the Nile northward to the First Cataract, but did not include the large body of records in the temples of Philae (Fig. 203). In view of this fact the Berlin Academy of Sciences dispatched an expedition to save the Philae inscriptions. This expedition of the Academy, under the direction of Professor Heinrich Schäfer of Berlin, purchased the equipment of the Nubian expedition of the University of Chicago, took over its photographer, and to a large extent adopted the epigraphic methods it had developed. Under the direction of Professor Hermann Junker of Vienna, Dr. Otto Daum, one of the Oriental Institute fellows, is now preparing for publication

³ "Ancient Records of Assyria and Babylonia," Vols. I-II. *Historical Records of Assyria*. By Daniel D. Luckenbill (Chicago: University of Chicago Press, 1926-27).

the huge body of Philae inscriptions, basing his work on the copies, photographs, and squeezes made by the German expedition. The original inscriptions are now rapidly perishing as a result of the flooding of the temples of Philae since the erection of the Aswan Dam. Although funds for the purpose are not yet available, it is to be expected that these inscriptions of Philae will be published when Dr. Daum has completed his editorial work.



FIG. 203.—THE TEMPLES OF PHILAE

The effects of the Aswan Dam, which now largely submerges these once beautiful temple ruins for some part of each year, are evidenced by the prominent stains extending across the towering pylons at the left.

The Book of the Dead: Papyrus Milbank and Papyrus Ryerson.—These two beautiful manuscripts were acquired by the Oriental Institute in the course of its first expedition, the reconnoissance journey of 1919/20 (cf. p. 40). As already mentioned, Papyrus Milbank is named after the donor, Mrs. Elizabeth Milbank Anderson. The publication of the papyrus *in extenso* has been made possible by a generous gift from Miss Minna Roman, an intimate friend of Mrs. Anderson. The manuscript is to appear under the editorship of Dr. T. George Allen, editorial secretary of the Institute. As first purchased this hieroglyphic papyrus was in the form of a roll—the most perfectly preserved roll which the writer had ever seen (see Fig. 12). It is a manuscript of great beauty, a remarkable example of calligraphic writing of the late period. When finally unrolled and mounted between glass plates in fifteen frames by the

proverbially skilful Hugo Ibscher of the Staatliche Museen in Berlin, its length was revealed as 35 feet. By comparison with a late manuscript of the Book of the Dead published by Lepsius the late Professor Wilhelm Spiegelberg, a friend of the writer, was able to demonstrate that Papyrus Milbank is of Ptolemaic date, and he kindly wrote the author to that effect in 1922. A preliminary account of the papyrus has been published by Dr. Allen in the *American Journal of Semitic Languages and Literatures*,⁴ and he has already made substantial progress in the preliminary researches incident to the complete publication.

In connection with Papyrus Milbank Dr. Allen will also edit and publish Papyrus Ryerson, which is another late copy of the Book of the Dead but in the hieratic or cursive hand (cf. Fig. 204).

Other publications of museum materials by Dr. Allen include a handbook of the Egyptian collection in the Art Institute of Chicago and a monograph on the Egyptian stelae in Field Museum of Natural History in Chicago. The former work was published in 1923; the latter work is now in press.

The Edwin Smith surgical papyrus.—Early in the history of the Oriental Institute Dr. Caroline Ransom Williams, one of our own doctors, then engaged in the study and publication of the Egyptian collection of the New York Historical Society, called the writer's attention to the existence of a large and beautifully written papyrus in a stately ancient book format (Fig. 204). This papyrus roll, purchased at Thebes in 1862 by Mr. Edwin Smith, had been given to the New York Historical Society by his daughter in 1906. On examination the papyrus proved to be a surgical treatise. After further study it was found to be a document of the highest importance in the history of science, being not only the earliest known surgical treatise but at the same time the earliest document in the history of science. At the request of the New York Historical Society the writer undertook the responsibility for publishing the document. Outside of the administrative duties of the Institute office, the task absorbed his entire time until shortly before the appearance of the publication in two volumes in October, 1930.⁵

⁴ XLIX (1932/33), 141-49.

⁵ *The Edwin Smith Surgical Papyrus* ("Oriental Institute Publications," Vols. III-IV).



FIG. 204.—A PAGE OF THE OLDEST KNOWN SURGICAL TREATISE—THE HIERATIC Papyrus EDWIN SMITH, SEVENTEENTH CENTURY B.C.

About two-fifths the size of the original

Studies in the rise of conscience and social responsibility.—A study of the earliest known sources revealing the rise of moral discernment has also been made by the writer. These sources are chiefly Egyptian. They disclose conscience as the product of social experience; and they demonstrate the fact *historically*, not psychologically or philosophically. All this took place from 1,000 to 2,000 years or more before there was any Hebrew nation. There had grown up by 1000 B.C. a great body of reflective literature on human conduct and morals and on a moral order. That is to say, before Hebrew literature began, this moral literature of Egypt was widely known. Hebrew religion and morals were profoundly influenced by it and drew from it not only fundamental ideas but actual words, expressions, and literary forms. Our moral heritage goes back, not only to Hebrew civilization, but through it as an intermediary to a much earlier oriental civilization which must be regarded as the primary source of our body of inherited morals. The investigation shows that conscience and a sense of social responsibility are very recent developments and that, in view of the relatively recent beginnings of man's moral discernment, we may fairly conclude that he has as yet not gone very far on this path. The volume, entitled *The Dawn of Conscience and the Age of Character*, will be published in 1933.

The Medinet Habu texts.—In preparation for writing the volumes of descriptive text which are to accompany the Medinet Habu folios of plates, Dr. Nelson has been studying the *reliefs*, while Dr. Edgerton and Dr. Wilson have made a joint translation of the *texts* in the first folio volume. Dr. Wilson has since completed the translation of the inscriptions in the second folio volume, for which in turn some notes were furnished by Dr. Edgerton. Dr. Wilson has likewise begun grammatical investigation of the unusual language of the Medinet Habu inscriptions and has carried his studies through the first volume of plates.

Demotic studies and a demotic dictionary.—For several years Dr. Edgerton has been specializing in demotic, the last phase of the ancient Egyptian language and writing before the early Christian Copts substituted the Greek alphabet for native Egyptian characters. He worked for a time with the author's old friend, the late Professor Wilhelm Spiegelberg, at Munich. Professor Spiegelberg

had been engaged for many years in the compilation of a comprehensive demotic dictionary and had accumulated a large body of materials and observations for this work. After his lamented death in December, 1930, his family informed Dr. Edgerton of their desire, which they were convinced was that of Professor Spiegelberg also, that he should continue the work on the demotic dictionary. Dr. Edgerton has stopped off in Munich whenever occasion offered for the further study of Professor Spiegelberg's papers and notes. It is planned that there should be issued first an abridged form of the dictionary (a *Handwörterbuch*), which the Institute will publish. By the time that the larger and more comprehensive work is ready for the press, it is hoped that the resources for its publication may be available.

In connection with his demotic studies Dr. Edgerton has made complete copies of the numerous demotic graffiti and *dipinti* which have been discovered as a result of Institute operations at the great temple of Medinet Habu. They form a very large group of wall records which should furnish an important revelation of the later life and history of the place preceding the development of the Coptic community.

The Institute has also been able to purchase a group of demotic papyri found by Dr. Edgerton in the hands of a Cairo dealer. These documents, some of which are dated by regnal years of the sovereign, are historical sources of importance for the Ptolemaic and pre-Ptolemaic age. Moreover, they will furnish further materials for the compilation of the demotic dictionary. The papyri are nine in number, eight of them large rolls, the ninth a nearly complete letter of the Persian period—that is, not later than the sixth century B.C. The eight large rolls are all contracts, two of them with Greek dockets. One is dated in the reign of Nectanebo. They are nearly all complete, and Edgerton writes that "several of them will make impressive museum pieces." All are decidedly worth publishing.

Coptic studies.—Among the purchases made by the Institute's reconnaissance expedition in Egypt in 1920 was a practically complete sixth century Coptic manuscript of the Book of Proverbs in the Sahidic dialect. This early manuscript, far more extensive than any other of its kind yet known, is of great value for textual criti-

cism of the Bible. It has been edited for the Oriental Institute by Professor William H. Worrell, of the University of Michigan.⁶

Among the manuscripts acquired in the Moritz collection (cf. p. 421) are four volumes beautifully written in Coptic. Miss Elizabeth Stefanski, a research assistant in the Institute, is now studying these manuscripts.

ASSYRIOLOGICAL AND ALLIED STUDIES

The Nuzi tablets.—Besides his work on the Assyrian Dictionary, Professor Edward Chiera has made extensive investigations of what are now called the "Nuzi tablets" (see p. 365). Since his coming to Chicago, a large part of his time has been devoted to these very important tablets, which he himself discovered. All of the tablets excavated during his first campaign at Nuzi (in 1925) have been brought here for study. Since Professor Chiera joined the Oriental Institute, he has edited several volumes of Nuzi texts. Three volumes of tablets found in 1925 have already appeared,⁷ and three more are nearly ready for press. Dr. Chiera has also published one volume of Nuzi tablets found in 1927/28.⁸ He has in course of preparation a volume embodying all of the personal names found in the Nuzi tablets. Several other works also are contemplated.

Eventually Dr. Chiera will prepare as an Institute publication a complete study of social conditions in the city of Nuzi during about the fifteenth century B.C. He says:

This will give us more information concerning conditions existing in that little town, which a few years ago was absolutely unknown even by name, than we have about the daily life of any other section of Assyria or Babylonia. We may even go a step further and say that we shall know more about the inhabitants of Nuzi than about any other ancient people.

⁶ *The Proverbs of Solomon in Sahidic Coptic According to the Chicago Manuscript* ("Oriental Institute Publications," Vol. XII [Chicago, 1931]).

⁷ American Schools of Oriental Research, "Publications of the Baghdad School," *Texts*, Vols. I-III (Paris, 1927-31).

⁸ *Excavations at Nuzi*, Vol. I ("Harvard Semitic Series," Vol. V [Cambridge, U.S.A., 1929]).

Sumerian, Akkadian, and Assyrian research.—Professor Arno Poebel reports as follows:

Texts. Hitherto unknown historical inscriptions in the Oriental Institute are being edited for publication, with translations and remarks on their historical import. A Sumerian chrestomathy with transliteration exhibiting the grammatical structure is being prepared as a companion for my *Grundzüge der sumerischen Grammatik*.

Translations. New and important Sumerian grammatical texts in the possession of Crozer Theological Seminary are being translated and interpreted. The oldest Akkadian inscriptions are likewise being studied (cf. below).

Lists. A comprehensive list of all phonetic values of cuneiform signs is being prepared, based on a critical investigation of their use in the various systems of writing. The filing of the values is being done under my direction by Mr. Richard T. Hallock, a research assistant. The so-called "ideograms" found in the various Akkadian systems of writing are also being listed, and the rules governing their use in the various periods are being investigated. The filing of the ideograms is being done under my direction by Dr. Samuel H. Kramer.

Studies of the following topics have been made or are in progress:

The historical evidence on the country and the people of Amurru.⁹
Reconstruction of the list of year formulas of the Third Dynasty of Ur.
Synchronisms in the date formulas of the Babylonian Amurru dynasties (Isin, Larsa, Babylon, etc.) and their contribution to the chronology of this period.

Phoenician and Old Aramaic inscriptions.¹⁰

The arrangement of the Phoenician alphabet.

Elamitic grammar.¹¹

Grammar of the oldest form of Akkadian. This phase differs considerably from the later form of the language and has not yet been treated in a grammar.

The Akkadian system of writing in the oldest period of Babylonian history.

⁹ To appear in the Institute's "Assyriological Studies."

¹⁰ Cf. Poebel, *Das appositionell bestimmte Pronomen der 1. Pers. Sing. in den westsemitischen Inschriften und im Alten Testament* ("Assyriological Studies," No. 3 [Chicago, 1932]).

¹¹ Cf. Poebel, "The Acropolis of Susa in the Elamite Inscriptions," in the *American Journal of Semitic Languages and Literatures*, XLIX (1932/33), 125-40.

Since his association with the Institute Professor Chiera has contributed to the Sumerian field one volume of autographed texts,¹² and two others are almost ready for press.

Professor F. W. Geers has been making a study of the religious literature of the Akkadians. The material in the strictly Semitic vernacular which has heretofore appeared in print is very limited and fragmentary. For example, outside of the group called "*Maqlû*," of which two-thirds was known, only a few broken lines of incantation texts were available in publications. To obtain a more solid basis for further studies in the religion of the Assyrians and Babylonians, Dr. Geers searched for and copied additional tablets of this nature in the British Museum. Such work abroad enabled him to make over a hundred new "joins" of fragments. He thus added so much to the above mentioned *Maqlû* series of incantations that of its approximately 1,500 lines only about 100 are left in fragmentary condition.

In the course of his work Dr. Geers obtained fragmentary incantations against ants and dry rot, spells to insure good business for an innkeeper, spells to avoid the consequences of having seen ghosts, and magic formulas for safeguarding a baby's health. The gaps still extant in these varied texts he hopes to be able to fill by further work in the British Museum and other collections. As soon as he has made an exhaustive study of such materials, his copies should be published in a volume which would make them available for further scientific use.

Apart from his Hittite researches (see below) Professor Arnold Walther spends much time on problems of Assyro-Babylonian philology, especially the meanings of rare words. Eventually his results will be grouped to form a monograph in the Institute's "Assyriological Studies." Dr. Walther is also collecting material for an Assyro-Babylonian grammar, with special reference to the historical development of the language and to its dialectal differences.

HITTITE STUDIES

Hittite cuneiform.—Before being called to the Institute, Professor Walther had been working for many years on Hittite cunei-

¹² *Sumerian Lexical Texts from the Temple School of Nippur* ("Oriental Institute Publications," Vol. XI [Chicago, 1929]).

form texts. His interest in such research has continued, and he is still keeping up to date a complete record of words occurring in Hittite cuneiform documents. Such a catalogue is especially necessary since as yet only small glossaries of the language have been published. His lexicographical material was very useful in connection with a new translation of the Hittite law code which Professor Walther prepared as an Appendix to the late Professor J. M. P. Smith's *Origin and History of Hebrew Law*.¹³ Correct translation of this difficult code involved study of the social and economic conditions and of the daily life of the people.

The researches by Dr. Julius von Mészáros in the linguistic remnant which he calls the "Päky" language (see pp. 296-300) will, if that scholar's hopes are realized, form a notable contribution to the better understanding of the ancient Hittite cuneiform texts.

Hittite hieroglyphic and the tablets of Crete.—In the writer's opinion there has long been reason to suspect an intimate relationship between Hittite hieroglyphic writing and the writing of Crete (cf. p. 274). Bossert has recently demonstrated clearly the close relationship between the two. Before this demonstration appeared the writer was greatly interested in the problem and secured from Sir Arthur Evans the privilege of access to the great collection of Cretan tablets which the latter had discovered at Cnossus. Thereupon Professor Emil O. Forrer, at that time a member of the Oriental Institute staff, was instructed to go to Crete and make his own photographs and hand copies of the tablets in the Candia Museum. The tablets found by Italian archeologists and all the tablets in possession of the Greek government were likewise placed at our disposition. The result was what is probably the first complete collection of the clay tablet inscriptions of Crete.

Meantime Dr. Forrer had been carrying on an extended investigation of the nature of Hittite hieroglyphic, the results of which he presented in a paper before the International Congress of Orientalists at Leyden in September, 1931. These results, supplemented by Dr. Forrer's further studies, have recently been published by the Institute.¹⁴ He has prepared also a complete grammar of the lan-

¹³ Published by the University of Chicago Press in 1931.

¹⁴ *Die hethitische Bilderschrift* ("Studies in Ancient Oriental Civilization," No. 3 [Chicago, 1932]).

guage, which he now calls "*tabalisch*." It is hoped that this grammar, together with the best preserved inscriptions as examples, may soon appear.

Dr. Gelb also has long been interested in the study of Hittite hieroglyphic inscriptions. Since his arrival at the Institute in 1929 his researches have been aided by the facilities here. The first result of his work was a monograph entitled *Hittite Hieroglyphs*, I.¹⁵ To obtain definitive results in this field it was found that many Hittite hieroglyphic inscriptions would have to be recopied. The paleographic difficulties here are similar to those which were experienced in connection with the early copies of Egyptian texts. Such inscriptions could not be safely studied from the unavoidably incorrect publications of the past, but needed to be examined in the original so that the forms of their signs could be carefully checked. For this purpose Dr. Gelb was sent to Asia Minor in 1932. There he was fortunate in obtaining not only fresh collations of many published texts but also copies of inscriptions heretofore unknown. With the help of this new material and a set of squeezes which had been taken by Professor Olmstead in Asia Minor many years ago, Dr. Gelb is now spending much of his time in preparing a series of reliable text facsimiles on which to base his future studies. These in turn would contribute toward the formation of a complete corpus of Hittite hieroglyphic inscriptions, which is a great desideratum. Once this is completed, Dr. Gelb will be ready for the second part of his work—a list of all the signs and words contained in these inscriptions.

SYRO-PALESTINIAN AND BIBLICAL STUDIES

History of Palestine and Syria.—The appearance of Professor A. T. Olmstead's admirable *History of Palestine and Syria*¹⁶ after he became connected with the Oriental Institute gives us the welcome opportunity to mention it here. By far the larger part of this great task had been already completed; nevertheless, the collections and other facilities of the Institute were available to aid him in the closing stages of his work, and the attractive volume, which

¹⁵ "Studies in Ancient Oriental Civilization," No. 2 (Chicago, 1931).

¹⁶ New York: Charles Scribner's Sons, 1931.

appeared after the Institute had moved into its new home, has been a source of pride and gratification to all its members.

Hebrew religion.—Professor William C. Graham is engaged in an intensive study of the religion of the Hebrews along lines differing from the conventional theological methodology. He is attempting to assemble and organize the great mass of information which the Old Testament itself provides about the religion of the common people as distinct from that of protesting factions, of which the Old Testament is so largely a direct expression. A better understanding of this popular religion will lead to a clearer realization of the Hebrew debt to the culture of the Near Eastern world as a whole. It will at the same time throw into sharper relief the unique contributions of the Hebrews to morals and philosophy.

Professor Graham is also working on the translation of the Ras Shamra epic, which has very direct bearing on his investigation of the culture patterns of Syria-Palestine. His studies in Hebrew religion will involve careful examination of all available extrabiblical materials on the ancient religions of that area.

The Syriac commentary of Barhebraeus on the Old Testament (the Peshitta project).—The English translations of our Old Testament are based on Hebrew manuscripts which are known to contain many ancient errors due to scribal copying. One way to correct these is to study the ancient translations of the Hebrew, for example, the Greek or Syriac. The Syriac translation is called the "Peshitta." It has been impossible to employ its text with safety because it has never been carefully determined on the basis of all existent evidence. One valuable means of establishing the text of the Peshitta is the study of a Syriac commentary on it, called the *Storehouse of Mysteries*, written by Barhebraeus in the thirteenth century of our era (Fig. 205). Twenty manuscripts of this work, scattered over Asia, Europe, and America, were made available in photostatic copies in order to enable Professor Martin Sprengling and Professor Graham, who have jointly carried on this project, to prepare a definitive edition of Barhebraeus' scholia. The first volume of this monumental work, which appeared in 1931,¹⁷ has attracted the favorable notice of scholars. Other volumes are in prep-

¹⁷ *Barhebraeus' Scholia on the Old Testament. Part I: Genesis-II Samuel* ("Oriental Institute Publications," Vol. XIII [Chicago, 1931]).

aration. Part II, the Psalms, may be ready for press early in 1934. Study of the minor prophets and Isaiah has been completed with the aid of Professor Frank G. Ward of Y.M.C.A. College, Chicago, and Professor J. H. Hicks of the Southern Methodist University at Dallas, Texas, respectively. Dr. James E. Dean, a research assistant in the Oriental Institute, has prepared for publication a very necessary revision of the text of Epiphanius' *Weights and Measures*, quoted on almost every page of Barhebraeus. This important text is now to be had only in the rare preliminary edition published in 1880 by Paul de Lagarde, with the Syriac text printed in Hebrew characters.

ARABIC AND MOSLEM STUDIES

The Moritz collection.—In 1925 Professor B. Moritz offered for sale to the Director his private collection of Arabic manuscripts, old bindings, Arabic inscriptions on stone, etc. Professor Moritz had been for years librarian of the great Khedivial (now Royal) Library in Cairo and had enjoyed unusual opportunities for obtaining manuscripts of all sorts. The funds were secured and the purchase consummated.

Twelve of the bindings from the Moritz collection were shown at a special exhibit at the Art Institute of Chicago in 1932 and are described by Miss Julie Michelet in a catalogue made for that exhibit.¹⁸

Professor Martin Sprengling, with the assistance of his students, has been engaged in cataloguing the Moritz collection. Besides a series of manuscripts not yet fully investigated, the collection contains Arabic papyri important for the economic history of early Islam. Professor Sprengling reports:

These papyri were studied with the aid of Miss Nabia Abbott, whose results constitute her dissertation. A first draft of this is now in my hands.

¹⁸ *A Loan Exhibition of Islamic Bookbindings* [by] the Oriental Department, the Art Institute of Chicago, March 20–May 20, 1932.

FIG. 205.—A PAGE OF BARHEBRAEUS' SYRIAC COMMENTARY ON THE OLD TESTAMENT

This particular page deals with Exod. 20:5–21:20 and thus includes Barhebraeus' remarks on the Ten Commandments.

THE ORIENTAL INSTITUTE

A card index of the Arabic and a translation of all the Arabic papyrus material from Aphrodito¹⁹ thus far published have been prepared. As a result, our Aphrodito material from the Moritz collection and a complete catalogue of all our Arabic papyri are now almost ready for publication. We are trying to get in touch with Soviet Russian authorities in the Caucasus for a small amount of Aphrodito material known to exist there, of which the Greek part has been published, but the Arabic not. This would give us a complete index. Miss Abbott will continue to work with me in preparing a descriptive catalogue of the rest of the documents other than books. The documents on papyrus, paper, parchment, and stone in the Moritz collection range from shortly after A.D. 700 to Selim the Grim early in the sixteenth century.

Of the Institute collection of early Arabic inscriptions on stone, the three Moritz stones have been assigned to Professor William M. Randall, of the Graduate Library School of the University of Chicago, for publication in the Macdonald *Festschrift*. Two are simple but good early tombstones, probably of the third Moslem century. One records some grant or regulation with regard to lands(?) in lower Ashmun of the Ashmunain made by no less a sovereign than the famous Harun al-Rashid.

Arabic literature: translations and editions.—Under the direction of Professor Sprengling, Dr. A. R. Nykl went abroad as a fellow of the Institute to carry on studies in Arabic literature. Two volumes have resulted: a translation of *The Dove's Neck-Ring*, a book about love and lovers, composed by Ibn Ḥazm some two decades after A.D. 1000;²⁰ and a text edition of the hitherto unpublished *Kitāb al-Zahrah* by Ibn Dāwūd.²¹ Professor Sprengling thus describes the contents of these volumes:

Ibn Ḥazm's book is almost entirely his own, including the poetry with which it is liberally spiced. It is in the main a philosophical treatise, as philosophy was understood at that time. Ibn Ḥazm's views, however, are

¹⁹ This Egyptian site is now known as Kom Ishkau.

²⁰ *A Book Containing the Risāla Known as The Dove's Neck-Ring, about Love and Lovers*, composed by Abū Muḥammad 'Alī ibn Ḥazm al-Andalusī, . . . translated . . . by A. R. Nykl (Paris, 1931).

²¹ *Kitāb al-Zahrah* ("The Book of the Flower") . . . , composed by Abū Bakr Muḥammad ibn Abī Sulaimān Dāwūd al-Iṣfahānī . . . , edited . . . by A. R. Nykl in collaboration with Ibrāhīm Ṭūqān ("Studies in Ancient Oriental Civilization," No. 6 [Chicago, 1932]).

his own; they bear in every way the stamp of his individuality. He does not tell the usual love stories of the ancients, Arabs and others, as do most of the books on this topic; his stories illustrating his points are from his own time and place. This is, therefore, a book on the love thought and life and poetry of Arabic Spain just before the rise of the troubadours in southern France. Nykl's introduction, dealing with the connections between troubadour thought and poetry and that of the Arabs in Spain and elsewhere, is a valuable contribution. As to the *Kitāb al-Zahrah* ("Book of the Flower") or *Kitāb al-Zuhrah* ("Book of Venus") by Ibn Dāwūd, Massignon had already called attention to this predecessor of Ibn Ḥazm. Ibn Dāwūd belonged to the same school of orthodox theologians and jurists which Ibn Ḥazm presently joined. Nykl was given the task of studying and publishing the earlier work from the unique manuscript at Cairo. The Arabic text is now in print. Whether it would pay to publish a complete translation seems doubtful, now that the text has been made public. Ibn Dāwūd, who died about A.D. 909, is at best only a remote predecessor of Ibn Ḥazm, and his book is really little more than a collection of poems and snatches of poems, from ancient Arabic down to what was modern in his day, on various phases of love. More important would be the continuation and publication in English of Nykl's studies on Ibn Ḳuzmān (died 1160) and his fellows, who wrote a more popular form of the more truly modern poetry known as *muwashshahāt*. For the study of this, the chapters of Ibn Khaldūn's *Prolegomena* dealing with this subject need to be re-edited in a better text than any we now have. This problem I have assigned to Mr. Anis Freyha, one of our Syrian students, as a topic for what may become a doctoral dissertation.

The acquisition of the Moritz collection and the demands of the Barhebraeus commentary postponed for a time further development of the *Kalilah wa-Dimnah* project, a study of animal fables, begun in 1926. Tales in which human life and relationships are shifted into the animal world for purposes of caricature (Fig. 206) or of instructive moralizing are of enormous age in the ancient Orient. They existed in Egypt as far back as the Empire (1580-1150 B.C.). Likewise in cuneiform literature of Assyrian age animal tales have survived. These earlier oriental animal fables already display a "framework" which makes them more attractive to the hearer and lends weight to the moral lesson to be conveyed. A collection of such tales, known in its Arabic form under the title *Kalilah and Dimnah* (the names of two talking jackals),

has come down to us from ancient India through many translations. Sir Thomas North, who made the translation of Plutarch's *Lives* used by Shakespeare, issued the earliest English translation of these animal stories in 1570. Quaint versions of these identical tales have



FIG. 206.—MAGISTRATE MOUSE ORDERS BAILIFF CAT TO CHASTISE THE BAD BOY

This Egyptian painting of about the thirteenth century B.C. on a flake of limestone depicts a session of court. Magistrate Mouse has risen from the seat of judgment and, leaning impressively on his staff, commands his bailiff the cat to beat the culprit, a boy. The scene was evidently an illustration of an animal fable, for on the back of the flake a scribe has written in black ink: "The mouse is angry at the boy." This piece is in the Oriental Institute collections.

also reached us through the slave markets of Africa in the Uncle Remus stories of our own South. In the summer of 1926 Professor Sprengling was commissioned by the Institute to follow up manuscripts of these tales in Europe and the Orient. As a result the Institute now possesses thousands of photographs (Fig. 207), representing many thousand pages of such manuscripts, which will enable our Arabists to study the history of this important literature and prepare a final Arabic text. One of the major problems in

the Kalilah wa-Dimnah project has recently been assigned to a capable graduate student, Mr. A. M. Honeyman.

The Druzes.—Miss Nejlā Izzedin is making anthropological and historical studies on the origins and ethnic relationships of the Druzes. Her investigations are well under way and promise substantial results. Her collection of anthropological photographs, measurements, etc., is now practically completed. This valuable



FIG. 207.—EXPLOITS OF "BRER RABBIT" AS ILLUSTRATED IN AN ARABIC MANUSCRIPT OF THE THIRTEENTH CENTURY OF OUR ERA

"Bimeby Brer Lion git so mad he jump in de spring headforemos' "

material will be permanently available as part of the Institute's collections. Miss Izzedin is now inquiring into two problems:

When did the Druzes first begin strongly to insist (a) in written and (b) in oral tradition that they were Arabs?

Why did the Druzes wish to be, and why should they now insist on being, of pure or largely pure Arab stock?

The revival of modern Arabic literature and of Islam.—Researches in the revival of modern Arabic literature and of Islam are being carried on by Professor Sprengling himself. His studies are being published in the *Open Court*²² and in the *American Journal of Semitic Languages and Literatures*.²³

²² See, up to now Vol. XLVI (Chicago, 1932). ²³ XLIX (1932/33), 162-68.

THE ORIENTAL INSTITUTE

The orientalists of the Institute have recently co-operated with Professor Charles H. Judd, dean of the University of Chicago School of Education, in the production of monographs on the origins of things, for use in teaching ancient history in the public schools.²⁴ They have likewise contributed to a "Monograph Series" issued by the New Orient Society of America²⁵ to aid in interpreting the Orient to Western readers.

²⁴ *The Story of Writing; The Story of Numbers; The Story of Weights and Measures* ("Achievements of Civilization," Nos. 1-3 [Washington, D.C., 1932]), prepared under the auspices of the Committee on Materials of Instruction of the American Council on Education.

²⁵ Nos. 1 and 3-6 (Chicago, 1932). These monographs serve likewise as regular issues in Vol. XLVI of the *Open Court*.

CHAPTER XIX

PUBLICATION

For some years after it was organized, the Oriental Institute possessed no publication fund. This situation caused the writer much anxiety because of the costliness of printing archeological and linguistic researches. Proper presentation of results often demands a large format and may involve color plates or the use of difficult type fonts such as Egyptian hieroglyphic. Meantime the Institute was rapidly becoming involved in an extensive publication program which would require a large annual subvention.

Obviously there is little use in supporting or carrying on researches if the results cannot be published. It was the recognition of this fact by the General Education Board and the International Education Board (see pp. 107 f.) and their enlightened response with generous subventions which made possible the Institute's present publication program, providing for the printing of Institute researches as fast as they can be made ready for the press. To do this has required the development of an efficient editorial organization, of whose make-up and operations the following pages give some account.

Editorial organization and contacts.—The editorial offices are under the management of the editorial secretary, Dr. T. George Allen. Associated with him are his secretary, Miss Elizabeth Blaisdell; two editorial assistants, Miss Ruth C. Wilkins and Miss Ruth L. Schurman; and a research assistant, Miss Elizabeth Stefanski.

In studying and investigating the civilizations of the ancient Near East the Institute is involved in a range of subjects as vast as ancient life itself (cf. pp. 11-25). For this reason a broad cultural background as well as intensive training is requisite for all members of the editorial staff. All are of necessity college graduates and have varying amounts of postgraduate work in the oriental field to their credit. Miss Stefanski is most interested in Egyptian phi-

logy, particularly in Coptic, its final, Christian stage (cf. p. 414). Miss Wilkins and Miss Schurman are giving special attention to archeology. The editorial secretary himself was associated with Haskell Oriental Museum from 1910 to 1926, taught Egyptian for some years, and was secretary of the Oriental Institute from its founding in 1919 to 1927, when he entered upon his present duties.

The editorial offices in the new Oriental Institute building open by intention on the library corridor leading to the main reading-room. Their convenient location greatly facilitates control of citations in manuscripts to be edited and comparison of all relevant materials. Here all manuscripts approved for publication are received and undergo detailed study and revision under the supervision of the editorial secretary.

Beyond its own immediate resources in personnel and in library facilities, the editorial staff enjoys the advantage of close contacts with members of the instructional and research staff. The latter participate directly in the Institute's program as teachers, investigators, and authors, and indirectly by their counsel and suggestions to the editorial group.

Responsibility for all business arrangements connected with the publications is in the hands of the administrative staff of the Institute. The control of Institute activities, including those affecting publication, by the Director's office provides effective administrative correlation of the Institute's work as a whole.

Oriental Institute books and papers are written by members of its field expeditions, by members of its Chicago staff, and by a limited number of associated scientists abroad. From the first group, especially the field directors, come reports and records of excavations and other undertakings carried out by Institute expeditions in the Near East. The second and third groups contribute philological, archeological, historical, and other studies. There is some overlapping among these groups. For example, Dr. Henri Frankfort, the field director of the Iraq Expedition, has provided a well documented study entitled *Archeology and the Sumerian Problem*.¹

¹ "Studies in Ancient Oriental Civilization," No. 4.

The members and associates of the Oriental Institute are chosen for their scientific or technical ability, without regard to nationality. Hence not a few scholars and scientists on the Institute staffs are Europeans who are never seen in the Institute's Chicago offices. As a result, a considerable correspondence on editorial questions is constantly going on between the overseas group and the editors. In addition, memoranda on various principles and methods have been distributed from time to time to Institute members both at home and abroad.

The five Oriental Institute series.—The Oriental Institute issues the following five series of publications:

- “Oriental Institute Communications”
- “Oriental Institute Publications”
- “Studies in Ancient Oriental Civilization”
- “Assyriological Studies”²
- “Ancient Records”

In planning these five series which now represent the Institute's publishing activities, varied needs have been kept in mind. These were visualized as follows in a fundamental general “Statement to Oriental Institute Authors” sent out March 1, 1932:³

In order to keep the general reader informed of Institute activities, we issue preliminary reports called “Oriental Institute Communications.” They should be *popular* in style, written in simple non-technical language, and plentifully illustrated. Their purpose is to bring out the main *facts* developed by field work. Theoretical discussions and treatises on individual finds, inscriptional or otherwise, are, of course, to be avoided in the “Communications.” The use of citations from new inscriptions discovered by a reporting expedition should be confined chiefly to establishing dates, historical connections, geographical identifications, etc., not involving full discussion of the inscriptions or their complete interpretation.

Scientific presentations of source materials, including full and final accounts of field operations and results, belong in the “Oriental Institute Publications.” These volumes are intended primarily for the specialist. They should be definitive and thus offer an adequate basis for utilization in

² In the chronological list which follows on pages 435-38, the titles of these first four series are abbreviated to *OIC*, *OIP*, *SAOC*, and *AS* respectively.

³ Here quoted with slight revisions.

scientific studies to follow. In the "Publications" themselves, however, theoretical discussions are to be definitely subordinated. Since definitive publication of written documents found in the field commonly involves preservative treatment before classification and detailed study become possible, and the Chicago headquarters are those most thoroughly staffed and equipped for both treatment and study, such work is carried on there whenever possible rather than in the field.

For the presentation of discussions and theories there are two series, "Studies in Ancient Oriental Civilization" and "Assyriological Studies." The former series deals with such phases of ancient cultures of the Near East as do not fall within the scope of the latter series, which comprises researches based principally on philological study of cuneiform texts. Studies in either series should deal comprehensively with their subjects. Incomplete discussions or brief papers on minor points are, of course, more suitable for journal use. The pages of the *American Journal of Semitic Languages and Literatures*, in so far as space permits, will be available for acceptable articles.

"Ancient Records" are English translations of original documents plus bibliographic and explanatory comments.⁴

The five series above described, listed in order of their establishment, have now⁵ attained the following extent:

"Ancient Records," 7 volumes

"Oriental Institute Communications," 14 numbers

"Oriental Institute Publications," 15 volumes

"Assyriological Studies," 4 numbers

"Studies in Ancient Oriental Civilization," 6 numbers

Several more works are now in proof.

Besides these five series the Institute has published three editions of a popular handbook briefly describing its activities. The first appeared in 1926, the second in 1928, and the third in 1931 at the dedication of the new Chicago headquarters. A brief guide to the museum halls of the Oriental Institute was issued in 1932. The editorial office has participated in the production of the foregoing booklets, has had charge of the issues of the *American Journal of Semitic Languages and Literatures* for April, 1931, and April, 1932, and

⁴ See pp. 407-8.

⁵ As of January, 1933.

has also exercised editorial control over some of the labels printed by the Institute itself for its museum (cf. p. 109).

Problems.—High standards have been set up in detail elsewhere in the "Statement" from which we have just quoted, and they have been maintained as far as possible. But circumstances have occasionally interfered. Even the English language, which we had hoped to use throughout, has had to give way to German in certain philological monographs which were accepted in their original form. Other German manuscripts, however, have been published in English translation. Again, certain works, among them Dr. Sprengling's *The Alphabet: Its Rise and Development from the Sinai Inscriptions*,⁶ really fall outside the scope of the series in which they appear. This particular instance was due to the fact that, when *The Alphabet* was printed, the series called "Studies in Ancient Oriental Civilization" had not yet been begun.

The spelling of oriental proper names is a source of constant complication. The chief languages of Egypt and Western Asia at the present day are Arabic and Turkish. Proper names and other terms taken over from each of these languages have yielded their quota of difficulties. Transliteration is possible on two different bases—as written or as pronounced. Combination or confusion of these two aspects has been accompanied by some diversity of symbols chosen by the devisers of different systems. In 1922 the Oriental Institute commissioned Dr. A. A. Brux, then a member of its staff, to prepare a paper on "Arabic-English Transliteration for Library Purposes." This consisted of two parts, "A Plea and a Proposal for Uniformity" and "The Treatment of Arabic Proper Names." After giving a conspectus of existing methods of transliteration of Arabic into English and seeking to correlate them into a more definite and unified system on the basis of *written* forms for library use, Dr. Brux discussed finally the modifications which *spoken* usage requires in the representation of geographic names in English works. After Dr. Brux's paper had demonstrated its usefulness in the Oriental Institute library files, the editorial office secured its publication as Part II of the *American Journal of Semitic*

⁶"Oriental Institute Communications," No. 12.

Languages and Literatures for October, 1930. The principles outlined by Dr. Brux have formed a convenient guide for the editorial office, though their application has had to be varied to some extent.

As to Turkish, the principle of vowel harmony vitally affected transliteration in the days when that language was still written in Arabic characters. After the Turkish government itself made the transition to Roman characters, it became desirable to adopt its own spellings in place of the transliterations from Arabic script which had previously been used. But, in spite of theory, the attainment of consistency in official Turkish spellings is a matter of gradual development. In its reports the Institute now follows Turkish usage to the best of its ability. Besides Arabic and Turkish the editors will increasingly have occasion to deal with Persian names also.

The editorial office is concerned with numerous other details, such as the extent of abbreviation in references, involving typographic form and style. Analysis of contents and addition of heads and subheads, correlation of text and illustrations, and verification and adjustment of references are other phases of its activities. The need or desirability of indexes too must be decided by the editors. Such indexes as seem advisable are prepared by the editorial staff. These include not only subject indexes, but indexes of object numbers, locations, etc., as the case may require.

Printing.—All Oriental Institute publications bear the imprint of, and most of them have been printed by, the University of Chicago Press. The members of the Press staff have been uniformly helpful with advice on technical problems. Institute needs have, however, in some cases required the use of printers abroad. In the case of our elaborate Medinet Habu folios, for example, the large-scale original line drawings from which many of the plates were made consisted of several sections which tended to shrink unevenly. Here was a difficult mechanical problem. The printing of these plates by the Chiswick Press in London, where the staff of the Epigraphic Expedition could reach the printer after a relatively short journey and control the necessary adjustments, also allowed less opportunity for shrinkage than would have occurred in sending proofs back and forth between Egypt and America. The color plates for the same volumes were allotted to Ganymed in Berlin,

while those of the Davies-Gardiner paintings and the Abydos publication are being printed by the Chiswick Press. The work of both presses has been of the highest quality and scientifically accurate in color tones. The Berlin firm of Meisenbach Riffarth and Company has produced various architectural plates. Some Assyriological discussions in German have been printed by J. Augustin of Glückstadt near Hamburg. A philological work on the newly discovered Pākhy language of Asia Minor (see pp. 296-300), written in German and involving a highly complex and unusual system of transliteration, is being printed by Hornyánszky in Budapest in order that it may be directly under the supervision of its author. The Arabic text of the *Kitāb al-Zahrah* (see pp. 422 f.) was excellently printed by the Catholic Press in Beirut.

It is very unfortunate that we have been unable to produce in America our large folio plates, requiring great accuracy in color reproduction and fine lines in black-and-white collotype. The manager of our University Press has made searching investigations, including actual visits to the leading color-printers of the United States. They have been able to produce neither the large color plates nor the black-and-white hair-line collotype plates demanded by our large folio volumes.⁷ Nevertheless, on these works, which cost the Institute many thousands of dollars in excess of any possible receipts, the Institute pays the United States government a heavy import duty—a tax on brains, science, and art which protects neither American business nor American labor, but cuts into resources which by great effort have been secured for the support of scientific research and should be used for that purpose. In the same way at the Port of Chicago the scientific work of the Oriental Institute, well known to be a non-profit-yielding organization, is taxed by the United States government every time it receives photographic records from its field expeditions—again a tax on science at the cost of funds donated for the support of research.

Distribution and costs.—Experience has indicated that of our non-technical series, "Oriental Institute Communications," editions of one thousand copies are suitable. Of the "Publications" and of the

⁷ The mechanical problem of shrinkage, mentioned above, was, of course, another factor involved.

two "Studies" series, which tend to be highly specialized, editions of five hundred are sufficient.

The distribution of Institute publications is exclusively in the hands of the University of Chicago Press, except for such sales as are made at the information desk in the lobby of the Institute building. The financial arrangements between the Institute and the Press provide that the Institute shall pay the entire cost of manufacturing. The Press then assumes all costs of storage, advertising, marketing, and distribution, and returns to the Institute a royalty of 50 per cent on 70 per cent of the list price. During the five years ending June 30, 1932, the Institute paid in manufacturing costs for its publications \$93,309.05. It received from the Press for the five years a total of \$5,529.13, or a little less than 6 per cent (exactly 5.92 per cent). This royalty varied from 1.81 per cent for the technical "Studies in Ancient Oriental Civilization" to 7.63 per cent for the "Ancient Records." It is surprising to discover that the royalty on "Oriental Institute Publications," our series of technical field reports, has averaged 6.72 per cent, whereas on the "Communications," preliminary reports of a less technical character, the royalty return has been but 2.94 per cent. European experience has shown that the demand for works such as ours continues through many years. Archeological works two generations old are now frequently out of print. A slow but steady demand for the volumes of the Institute is assured, then, for the next two generations. The turnover is, however, too slow to maintain the rapidly increasing publication program out of current receipts. In 1927/28 the Institute publication program as a whole cost \$3,331.06; in 1931/32 it amounted to \$46,771.33.

Since the Institute's researches on which its publications are based have in every case been far more costly than the printing, though the cost of printing alone often exceeds any price which could be fixed for such books, it has been the effort of the Institute to set its prices as low as possible. A price so high as to prevent purchase by at least the leading libraries would of course completely block circulation among scientists and defeat the whole purpose of publication. It has obviously been necessary to price many of the Institute volumes below their production costs. Even so, very much

to our regret some European scholars have found our costly folios beyond their means, or even too expensive for their institutional libraries. In probably no instance could the returns to the Institute, even if all copies were sold, repay the costs of production and distribution. For this reason the Institute has distributed a liberal number of free copies of its smaller monographs, especially of its "Communications," to learned institutions and to specialists.

The Oriental Institute volumes already published or in press were sufficiently numerous by 1929 so that the University of Chicago Press, with Institute co-operation, issued in that year an elaborate descriptive booklet entitled *The New Past*. By the spring of 1931 so many additional works were appearing that a six-page supplement was issued. The editorial office has participated not only in this more elaborate form of advertising but in keeping up to date the list of Institute publications in the annual catalogues of the Press.

Chronological list of publications.—The following list, arranged by budget years, illustrates the expansion of the Institute's publication program:

July 1, 1905—June 30, 1907

Ancient Records of Egypt, Vols. I–V. *Historical Documents*. By JAMES H. BREASTED. 1,774 pages, royal 8vo, cloth, sold only in sets⁸ \$22.00

July 1, 1921—June 30, 1922

OIC⁹ No. 1. *The Oriental Institute of the University of Chicago—A Beginning and a Program*. By JAMES H. BREASTED. (Out of print.)

July 1, 1923—June 30, 1924

OIP Vol. I. *Oriental Forerunners of Byzantine Painting*. By JAMES H. BREASTED. 105 pages, 23 plates, 58 text figures, 4to, boards 4.00

July 1, 1924—June 30, 1925

OIP Vol. II. *The Annals of Sennacherib*. By DANIEL D. LUCKENBILL. 196 pages, 3 plates, 4to, boards 4.00

⁸ These volumes were adopted into the Institute's program. The "Ancient Records" series was continued by Dr. Luckenbill's volumes of 1926/27.

⁹ These abbreviations for Institute series are explained on p. 429, n. 2.

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July 1, 1926—June 30, 1927

- Ancient Records of Assyria and Babylonia*, Vols. I-II. *Historical Records of Assyria*. By DANIEL D. LUCKENBILL. 801 pages, royal 8vo, cloth, sold only in sets..... 8.00
 Special library edition on all-rag paper. Vols. I-II..... 10.00

July 1, 1927—June 30, 1928

- OIC No. 2. *Explorations in Hittite Asia Minor—A Preliminary Report*. By H. H. VON DER OSTEN. (Out of print.)
 OIC No. 3. *First Report of the Prehistoric Survey Expedition*. By K. S. SANDFORD and W. J. ARKELL. 52 pages, royal 8vo, paper 1.00

July 1, 1928—June 30, 1929

- OIC No. 4. *The Excavation of Armageddon*. By CLARENCE S. FISHER. 78 pages, royal 8vo, paper..... 1.00
 OIP Vol. V. *Researches in Anatolia*, Vol. I. *Explorations in Central Anatolia, Season of 1926*. By H. H. VON DER OSTEN. 167 pages, 24 plates, 242 text figures, 4to, cloth..... 4.00
 OIC No. 5. *Medinet Habu, 1924-28*. By HAROLD H. NELSON and UVO HÖLSCHER. 50 pages, royal 8vo, paper..... 1.00

July 1, 1929—June 30, 1930

- OIC No. 6. *Explorations in Hittite Asia Minor, 1927-28*. By H. H. VON DER OSTEN. 153 pages, royal 8vo, paper..... 1.00
 OIP Vol. XI. *Cuneiform Series*, Vol. I. *Sumerian Lexical Texts from the Temple School of Nippur*. By EDWARD CHIERA. 126 plates with 256 texts in facsimile, 4to, cloth..... 5.00
 OIP Vol. X. *Prehistoric Survey of Egypt and Western Asia*, Vol. I. *Paleolithic Man and the Nile-Faiyum Divide; A Study of the Region during Pliocene and Pleistocene Times*. By K. S. SANDFORD and W. J. ARKELL. 77 pages, 11 plates, 1 map, 4to, cloth..... 5.00
 OIP Vol. VI. *Researches in Anatolia*, Vol. II. *The Alishar Hüyük, Season of 1927. Part I*. By H. H. VON DER OSTEN and ERICH F. SCHMIDT. 284 pages, 5 colored plates, 22 maps, 251 text figures, 4to, cloth..... 8.00
 OIC No. 7. *Medinet Habu Studies, 1928/29. I. The Architectural Survey*. By UVO HÖLSCHER. *II. The Language of the Historical Texts Commemorating Ramses III*. By JOHN A. WILSON. 33 pages, 3 plates, royal 8vo, paper..... 1.00

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- OIC No. 8. *Explorations in Hittite Asia Minor, 1929*. By H. H. VON DER OSTEN. 196 pages, royal 8vo, paper. 2.00
- OIP Vol. VIII. *Medinet Habu, Vol. I. Earlier Historical Records of Ramses III*. By the Epigraphic Survey, HAROLD H. NELSON, Field Director. xviii+10 pages, 54 plates, 2 text figures, large folio, cloth. 20.00

July 1, 1930—June 30, 1931

- OIP Vols. III-IV. *The Edwin Smith Surgical Papyrus*. Edited by JAMES H. BREASTED. Two volumes, 4to and folio, cloth. 20.00
- OIP Vol. XIV. *Cuneiform Series, Vol. II. Inscriptions from Adab*. By DANIEL D. LUCKENBILL. 87 plates with 198 texts in facsimile, 4to, cloth. 5.00
- AS No. 1. *Beiträge zum assyrischen Wörterbuch, I*. By BRUNO MEISSNER. (Originally called Vol. I, Part I.) 92 pages, royal 8vo, paper. 1.00
- OIC No. 9. *New Light from Armageddon. Second Provisional Report (1927-29) on the Excavations at Megiddo in Palestine*. By P. L. O. GUY, with a chapter on "An Inscribed Scaraboid" by W. E. STAPLES. 68 pages, royal 8vo, paper. 1.00
- OIC No. 10. *Medinet Habu Reports. I. The Epigraphic Survey, 1928-31*. By HAROLD H. NELSON. *II. The Architectural Survey, 1929/30*. By Uvo HÖLSCHER. 69 pages, 4 plates, royal 8vo, paper. 1.00
- OIC No. 12. *The Alphabet: Its Rise and Development from the Sinai Inscriptions*. By MARTIN SPRENGLING. 71 pages, royal 8vo, paper. 1.00
- SAOC No. 1. *Notes on Egyptian Marriage, Chiefly in the Ptolemaic Period*. By WILLIAM F. EDGERTON. (Originally called Vol. I, Part I.) x+25 pages, royal 8vo, paper. 1.00

July 1, 1931—June 30, 1932

- OIP Vol. XII. *The Proverbs of Solomon in Sahidic Coptic according to the Chicago Manuscript*. Edited by WILLIAM H. WORRELL. xxx+107 pages, 1 plate, 4to, cloth. 5.00
- OIP Vol. XIII. *Barhebraeus' Scholia on the Old Testament, Part I. Genesis-II Samuel*. By MARTIN SPRENGLING and WILLIAM C. GRAHAM. xvi+393 pages, 4to, cloth. 10.00
- AS No. 2. *The Sumerian Prefix Forms E- and I- in the Time of the Earlier Princes of Lagaš*. By ARNO POEBEL. 47 pages, royal 8vo, paper. 1.00

OIC No. 11. <i>Anatolia through the Ages. Discoveries at the Alishar Mound, 1927-29.</i> By ERICH F. SCHMIDT. 165 pages, royal 8vo, paper.....	2.00
SAOC No. 2. <i>Hittite Hieroglyphs, I.</i> By IGNACE J. GELB. xxii+88 pages, royal 8vo, paper.....	1.50
OIP Vol. IX. <i>Medinet Habu, Vol. II. Later Historical Records of Ramses III.</i> By the Epigraphic Survey, HAROLD H. NELSON, Field Director. 76 plates, 6 text figures, large folio, cloth.....	30.00
AS No. 3. <i>Das appositionell bestimmte Pronomen der 1. Pers. Sing. in den westsemitischen Inschriften und im Alten Testament.</i> By ARNO POEBEL. 86 pages, royal 8vo, paper.....	1.00

July 1, 1932—

SAOC No. 5. <i>A New Inscription of Xerxes from Persepolis.</i> By ERNST E. HERZFELD. viii+14 pages, royal 8vo, paper.....	.50
AS No. 4. <i>Beiträge zum assyrischen Wörterbuch, II.</i> By BRUNO MEISSNER. 112 pages, royal 8vo, paper.....	1.00
OIP Vol. VII. <i>Researches in Anatolia, Vol. III. The Alishar Hüyük, Season of 1927. Part II.</i> By H. H. VON DER OSTEN and ERICH F. SCHMIDT. 134 pages, 1 colored plate, 106 text figures, 4to, cloth.....	5.00
OIP Vol. XIX. <i>Researches in Anatolia, Vol. IV. The Alishar Hüyük, Seasons of 1928 and 1929. Part I.</i> By ERICH F. SCHMIDT. xxii+294 pages, 47 plates (7 in colors), 377 text figures, 4to, cloth.....	12.00
SAOC No. 3. <i>Die hethitische Bilderschrift.</i> By EMIL O. FÖRNER. 62 pages, royal 8vo, paper.....	1.00
OIC No. 13. <i>Tell Asmar and Khafaje. The First Season's Work in Eshnunna, 1930/31.</i> By HENRI FRANKFORT, THORKILD JACOBSEN, and CONRAD PREUSSER. 112 pages, royal 8vo, paper.....	1.50
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SAOC No. 6. <i>Kitāb al-Zahrah.</i> Composed by ABU BAKR MUHAMMAD IBN DĀWŪD. Edited by A. R. NYKŁ in collaboration with IBRĀHĪM ṬŪQĀN. 8+406 pages, royal 8vo, paper...	2.00

The wide range of the Oriental Institute's activities is but partially illustrated by the foregoing list of available publications.

Further volumes already in press will bring into print lines of investigation hitherto untouched. Each new discovery reveals a more spacious vista of possible achievement. As its expeditions abroad and its scholars at home are enabled to continue their researches and to publish their results, the Oriental Institute seeks ever to enlarge man's vision and his understanding of his kind.

In Memoriam



JOHN HARTMAN, Photographer of the Epigraphic Expedition, died December fifth, nineteen hundred twenty-six

DANIEL DAVID LUCKENBILL, PH.D., Professor of the Semitic Languages and Literatures, Editor of the Assyrian Dictionary, died June fifth, nineteen hundred twenty-seven

JOHN MERLIN POWIS SMITH, PH.D., D.D., Professor of Old Testament Language and Literature, Vice-Chairman of the Department of Oriental Languages and Literatures, Editor of the *American Journal of Semitic Languages and Literatures*, died September twenty-sixth, nineteen hundred thirty-two

EDWARD CHERA, PH.D., Professor of Assyriology, Editor of the Assyrian Dictionary, died June twentieth, nineteen hundred thirty-three

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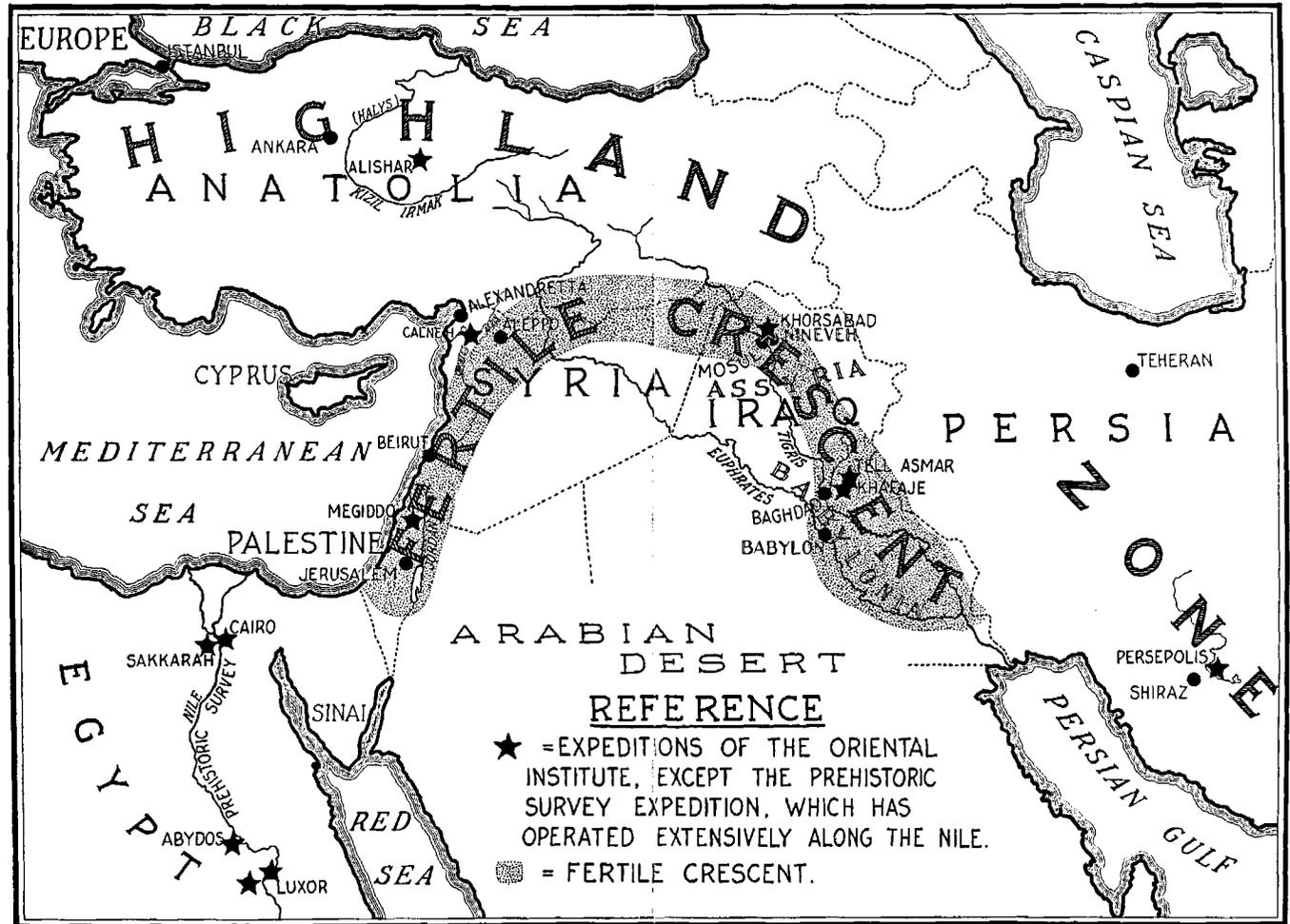
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MAP SHOWING THE FIELD OPERATIONS OF THE ORIENTAL INSTITUTE IN THE NEAR EAST

The entire region comprises the *Highland Zone* in the north, the *Desert* and the *Nile Valley* in the south, and the *Fertile Crescent* lying between the Desert and the Highland Zone. Stars indicate the locations of the Institute's field expeditions or other scientific projects. These comprise a total of thirteen undertakings, of which twelve are still in progress. Because it is a mobile unit, the Prehistoric Survey cannot be indicated by a star. It will be seen that the expeditions are strategically distributed. Six are in Asia: one at each end of the Highland Zone and others at four points along the Fertile Crescent. There are likewise six expeditions in Egypt and Northeast Africa.