Early Work on the ACROPOLIS at SUSA

THE BEGINNING OF PREHISTORY IN IRAQ AND IRAN

By ROBERT H. DYSON, JR.

In 1850 Rawlinson wrote in the *Journal of the Royal Asiatic Society:*

> It would be particularly interesting to excavate the great mound of Susa, for an obelisk which is still lying on the mound, and which bears the long inscription of King Susra, attests the existence of sculptured slabs and there are also good grounds for supposing we might find bilingual legends, that is, hieroglyphic legends with cuneiform translation.

In the following year, 1851, with Rawlinson's recommendation, Lord Palmerston, the Prime Minister, obtained from Parliament a grant of £500 for further explorations at Susa.

The site had attracted much attention since the early 1800's as the numerous military and diplomatic missions, staffed by men schooled in the classics and biblical history, appeared in Persia in support of British and French interests. The members of the missions found the question of the relationship of ancient geography to the ruins and modern landscape challenging; consequently they recorded their impressions carefully in a number of personal journals which subsequently were published in England or France. The question of the location of Susa was of primary interest, due to its connection with the prophet Daniel and other biblical references. It was not, however, until Rawlinson gained official support for an investigation that any serious attempt at excavation was made. In 1850, the geologist William Kennett Loftus and his friend Henry A. Churchill, who were serving on a commission to settle the frontier between Persia and the Ottoman Empire, visited the site "for the purpose of examining the mounds, and, if possible of opening trenches." The party was forced to leave after a brief visit, due to the hostility of the Arabs who had been aroused by the holy men of nearby Dezfūl.

During the following winter, Col. Williams, the commandant of the Boundary Commission, returned to Susa with Loftus and Churchill. The latter completed the plan of the site shown here. This plan, along with a closely similar one published by Dieulafoy in 1890, presents the only available record of the original shape of the Acropolis and other mounds at Susa before their contours were fundamentally changed through the dumping of the excavation debris of later

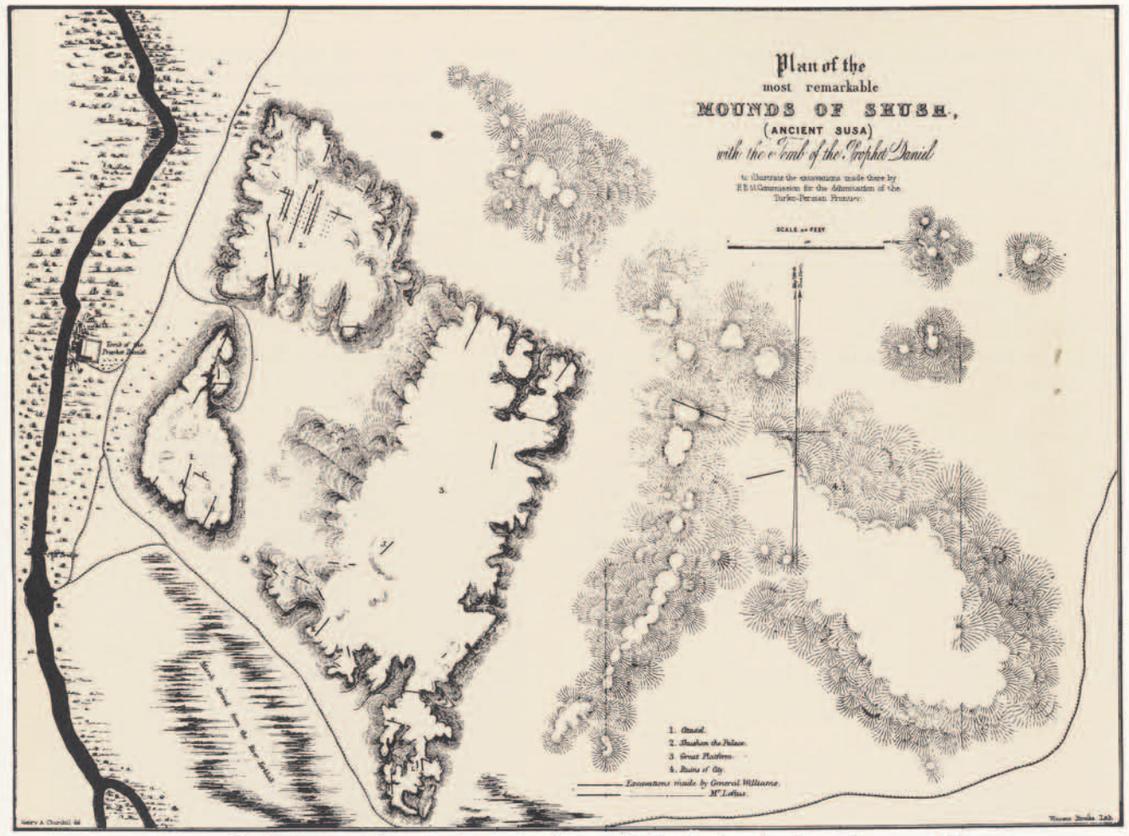
First published view of Susa. From a sketch by H. A. Churchill published by Loftus in 1857.
WILLIAM KENNETT LOFTUS, *Travels in Chaldea and Susiana.*

expeditions. A comparison of the Churchill map and the aerial view of the site published in 1940 makes the degree of change very apparent. The height of the mound in the air view has been reduced an average of ten meters, leaving intact only the levels dating to before 3000 B.C.

Although no detailed report was ever published by Col. Williams concerning his excavations, a certain amount of specific information may be obtained from the somewhat rambling narrative account given by Loftus in his book *Travels and Researches in Chaldaea and Susiana* (1857) and his report to the Literary Society of Great Britain (1856). Each of the trenches excavated was marked on the plan and designated by a letter of the alphabet. The trenches were lettered consecutively on all of the mounds as a single series, as shown on Churchill's plan. Loftus informs us that

> . . . three trenches, dug into the citadel mound to a depth of nineteen feet failed to discover anything except portions of a brick pavement—fragments of molded composition—bricks stamped with cuneiform, and covered with green glaze—and (C on the plan) a large piece of copper like the lining of a water-tank, which, being left upon the mound, was soon cut up and carried away piecemeal by the Arabs.

On 19 January 1852, Loftus set out from Baghdad to Dezfūl to carry out a second season of work. Trenches on the Acropolis mound produced a stone gate, a broken sculpture of a bird's neck, a fragment of a statue of polished black basalt with some cuneiform carving on it, a broken mortar-shaped vessel containing a quantity of burnt bitumen and the impression of a sheep's teeth and jaw. A foundation wall of ancient brick inscribed along the edge with pre-Achaemenid Elamite cuneiform script ran westward across the mound. A few feet to the north stood a circular brick column, three feet in diameter. On the same level, and parallel to the wall, were more ancient foundations. On the surface, seventeen feet from the column, was a piece of inscribed red sandstone which showed traces of burning. A second slab was of polished limestone. Nearby were found a small ivory *crux ansata* (two inches long), a bundle of iron spearheads, two or three copper ornaments suggesting the horse trappings seen on Assyrian monuments, a rude cubic die, a clay object of mushroom form with top perforated and the shaft covered with complex Babylonian characters. Broken alabaster vases were also found. Four of these vases had trilingual inscriptions and are now in the British Museum. The Persian inscription reads "Xerxes, the Great King" (485-466 B.C.) and is accompanied by its equivalent in an Egyptian cartouche. According to Loftus the vases were of aragonite or "Oriental Alabaster," a veined variety of which was derived from a quarry near Tell el-Amarna in Egypt from 750 B.C. onwards. With such fragmentary material a knowledge of prehistory began. The results were disappointing in



First published map of the major mounds of Susa (1857) showing the Acropolis mound (1).
WILLIAM KENNETT LOFTUS, *Travels in Chaldea and Susiana.*

Aerial view of the modern town of Susa (left) and state of excavated Acropolis mound (center foreground) in 1940. Headquarters of the expedition directed by Erich F. Schmidt are at the northern end of the mound. Apadana mound with remains of Achaemenian palace in background.

comparison with their discovery of an Achaemenid palace elsewhere at Susa.

The excavations of Williams and Loftus, although limited in time and in the number of movable objects recovered (part of which are preserved in the British Museum), and certainly limited in the methods used in their work, nevertheless, produced the first actual plan of the site, established through the inscriptions its virtually certain identity as the Biblical Shushan, and established the presence of deposits of at least three major historical periods on the Acropolis in relative stratigraphic order: Sassanian (A.D. 226-636), Achaemenian (the Xerxes inscription noted above), and Elamite (prior to 550 B.C.).

Loftus was under no illusions as to the limits of his own work. In his report of 1856 he comments:

> With the small sum at my disposal for actual excavation, it was utterly impossible to make a thorough examination of the vast area covered by the ruins. It is worthy of notice that the remains discovered were at a remarkably shallow depth from the surface . . . No fragment of marble occurred below fourteen feet, although several trenches were carried to a considerable depth . . .
>
> If further excavations should be made, it will be necessary to carry trenches to a much greater depth than, with my limited funds, I was able to effect.

Like his many successors in the field of excavation, Loftus had to limit his aims to fit his budget while at the same time being aware of the need to carry the work further in order to see a more complete picture. The intriguing question of the nature of the earlier remains was still unanswered. With the appraising eye of an experienced field man, Loftus concludes his long narrative with the remark that

> The excavations upon the Great Mound (Acropolis) fully convinced me that if any primitive buildings still remain perfect at Susa, they are to be disentombed at this lower portion of the ruins.

For nearly a quarter of a century after the excavations of Loftus, archaeological activity in the Near East slowed almost to a standstill. The work of Botta, Layard, Place, and Rassam at Khorsabad, Nimrud, and Kuyunjik (Nineveh) had thoroughly established the Assyrians, and to a lesser extent the Babylonians, in the popular mind of Europe. Indeed, Glyn Daniel writing about this period remarks that

> So full was the British Museum with Mesopotamian material that a special Assyrian Room was arranged in the Crystal Palace; and when Bouvet, Place's successor, asked for more money to carry out excavations he was told: "Non . . . les fouilles sont finies, on a trop dépensé."

But the cause of this lull may also be seen in the political and financial preoccupations of these years. British anxiety over the Turko-Persian frontier was reduced through the work of the Frontier Commission started by Col. Williams, while alarm over the condition of Persia declined with the removal of the Napoleonic threat to India.

It was not until 1880 that fieldwork was resumed at Susa, this time by a French Mission under the direction of the architectural historian Marcel Dieulafoy and his remarkable wife Jeanne. By this time the conceptual framework of archaeology had already changed radically. The degree of change may be illustrated by reference to five major developments which followed the basic decipherment of cuneiform script in 1857 by Rawlinson. First was the effective formulation of the theory of evolution by Charles Darwin in 1859 and its subsequent influence upon theories concerning the origin of man and the transformations of society and culture. The possibility of a long history of human evolution reaching back into an antiquity previously undreamed of suddenly became a reality. Secondly, the multiple discoveries of stone tools in geologically ancient contexts were now seen in a new perspective and consequently accepted as evidence of human activity in previous geological periods. Thirdly, the gradual acceptance of the "three age system" (Stone, Bronze, and Iron) as originally set forth in the early part of the century (*Copenhagen Museum Guide* 1836) and revised in later years, led to the systematic analysis and organization of archaeological data from widespread areas. Fourthly, the success of Schliemann at Troy and Mycenae dramatized prehistoric archaeology, and led to a re-examination of classical sources as historical documents relevant to archaeological fieldwork. Equally important, Schliemann's work indicated for the first time the existence of extensive pre-Hellenic civilizations in the East Mediterranean. Finally, the excavations at Telloh in southern Mesopotamia between 1877 and 1881 by the French Consul at Basra, M. Gaston Charles Ernest Chocquin de Sarzec, uncovered

the first extensive remains of the pre-Babylonian Sumerians and confirmed the suspicions of philological scholars that a pre-Akkadian and non-Semitic language had once existed in the area. Thus a whole new frontier lay open in the Near Eastern field. The first step had been taken in pushing the chronology backward in the direction of the early Stone Age periods already under study in Europe.

The roots of these major advances in Europe clearly lay in the natural sciences and classics. The inspiration for a French expedition to Susa was, however, largely architectural, for its leader, Marcel Auguste Dieulafoy (1844-1920), was an

Excavators Marcel and Jeanne Dieulafoy undertook work at Susa between 1881 and 1886 and discovered the famous Achaemenian glazed brick panels now in the Louvre.

HARPER'S NEW MONTHLY MAGAZINE, *June 1887.*

engineer by training. Dieulafoy and his wife, Jeanne Paule Henriette, paid a short visit to Susa in 1881 but returned to France "without having so much as scratched the surface of the soil." Dieulafoy, fired by his desire to find the Oriental connections with Gothic art in Europe, proceeded to organize the new mission.

The situation is described by Mme. Dieulafoy:

> M. de Ronchaud [Director of the National Museums] had at his disposal nothing but a balance remaining over from the Universal Exposition of 1878, 31,000 francs, a very small sum, considering . . . [distance, etc.]. However, each of the Ministries came to our assistance: the Ministry of Public Instruction added 10,000 francs to our budget; the War Department lent us arms, saddles, and tents; the Navy promised to transport our whole mission gratis as far as Aden; and finally two young collaborators, M. Babin, Lieutenant of Engineers, and Professor Houssay, were placed under the orders of my husband.

Digging permission had been negotiated in Teheran with the result that

> The French government was authorized to send an archaeological mission into Arabistan under the following reserves: the Tomb of Daniel should not be touched; all gold and silver objects found should become the exclusive property of his Majesty and all other objects discovered should be divided between our Museums and Persia.

Following the end of the first season's work (1884-85) the Persian government cancelled the contract which was then re-negotiated. Mme. Dieulafoy states that the result was "the prolongation of the *status quo* at least for one year." This comment appears to be contradicted by an item in *Academy* of 14 July which states, "Many objects of interest had been obtained and brought to the Louvre, the works having been stimulated by the Shah's abandonment of claims to half the collection, as stipulated under terms of the original Farman."

The mission turned its attention to tactics and strategy at the site—not without difficulty.

> Before setting to work it was found advisable to examine with the greatest attention the excavations begun a little at hap-hazard by Loftus . . .
>
> The afternoon [of February 28, 1885] was passed on the tumuli and in the deep crevasses which cut up their sides, without any indication being able to determine us to attack them at one point rather than another.

The dilemma was compounded by the desire to do systematic work:

> . . . it does not enter into my husband's views to dig any holes whatever and to search, in the dark, for 'Museum objects'; excavations executed with method can alone give scientific results.

Later Mme. Dieulafoy adds:

> The idea of searching for small monuments, as does a dealer in antiquities could not enter my husband's thoughts. The main lines of an architecture, the constructive art, supreme manifestations of the intellectual and economic development of a people, seemed to him alone worthy of his efforts.

The efforts of their predecessors were dismissed rather lightly:

In 1852 the English government undertook to settle the southern frontier of Turkey and Persia. For this purpose some geographers and some diplomatists penetrated Susiana, where their official inviolability guaranteed them relative security. The people talked to them about Susa, the name of which has remained popular in Arabistan, and finally Colonel Williams, and Sir Kennett Loftus, the explorer of the tumuli of Warka, could not resist the temptation to make excavations around the fragments of fluted columns which were to be found here and there on the surface. They hired three hundred Arabs, had a trench dug . . . and soon brought to light four bases of columns with inscriptions . . . Further excavations made to the north of the edifice proved unfruitful; the walls of the room, etc., were not found.

The stone bulls which crowned the capitals were too heavy to be removed, and some enamelled materials alone were sent to London, together with a few terracotta statuettes and some cuneiform inscriptions engraved on clay.

At first sight my husband, forcibly struck by the aspect of the tumulus, remained convinced that the trenches dug by Sir Kennett Loftus were not deep enough [as well they might appear twenty-five years after the event!], and that it would have been preferable to have made the excavations to the south rather than to the north.

Nevertheless, work was undertaken, mainly on the Apadana mound and the Achaemenian palace area. The local inhabitants were treated to an amazing beginning as narrated by Mme. Dieulafoy:

> Full of emotion, I struck the first blow with the pick on the Achaemenidaean tumulus, and worked until my strength gave out. My husband then took his turn with the pick, while our acolytes carried away the loose earth. This was how the excavations at Susa were begun.

Work remained difficult. Not only could the excavators not identify mudbrick, and consequently found themselves sometimes digging in walls, they were also hindered by pilgrims visiting Daniel's traditional tomb at the edge of the river.

> . . . to say nothing of the harrassment endured at the site, especially at the hands of the pilgrims coming to Daniel's Tomb in April 1885. No sooner had they arrived than they rushed into the trenches, picked up the bones which we could not conceal in certain places, as great was the quantity, insulted us—at a good distance—fired their guns in our ears without a word of warning, became wild with rage at our calmness in presence of these aggressive demonstrations, and finally broke at night all the objects which were too heavy to be carried to our tents. Fifty funeral urns, a whole family vault, placed all ready to be photographed, were thus smashed to atoms during a storm . . . in order to avoid irreparable damage we were obliged to give up the complete excavations of the Apadana. Marcel would have set guards over the trenches, but the bravest of the workmen shut themselves up in the tomb of Daniel immediately after sunset, and neither silver nor gold would tempt them to face the divas, the fairies, the enchanters, and above all the thieves, who peopled the tumuli.

Unfortunately, Dieulafoy's extreme bias in favor of architecture led to a serious warping of the evidence in his final report, which contains what is possibly one of the greatest speculative tours de force extant in archaeological literature in the form of the restored plan. Nevertheless, the excavations of Dieulafoy confirmed the basic sequence already indicated by Loftus, refined it, and added to it a number of specific details and many small objects. The major result was, however, the recovery of the famous glazed brick "archer" panels of Achaemenid date now in the Louvre and the further elaboration of the building plans of that period.

The work of Dieulafoy at Susa was the first step in a gradual acceleration of interest in Near Eastern archaeology, which reached its climax in the early years of the twentieth century. Parallel with the rise of this interest in prehistory was the extension of evolutionary theory from biology to social science by such men as Sir Edward Burnett Tylor (1832-1917), Herbert Spencer (1820-1903), and Lewis Henry Morgan (1818-1881). These men focussed attention on the major stages through which mankind had passed and in doing so dramatized the lack of accurate information relating to prehistory.

Against this background of speculative theory, archaeological fieldwork rose to an unparalleled high with expeditions from all the major countries of Europe and the United States working in the Near East. Major advances were made at every point. In Egypt the British archaeologist Sir Flinders Petrie (1853-1942) established the predynastic periods through his excavations at Nagada and Ballas (1894-95) and at Diospolis Parva (1898-99). His application of a system of Sequence Dating (1901, 1904) provided a brilliant advance in the methodology of comparative typology. At the same time Sir Arthur John Evans (1851-1941) had started his work on Crete, and in 1901 published his first results from Knossos. Somewhat earlier, in 1882, Wilhelm Dörpfeld (1853-1940) had followed up Schliemann's work and published the chronology of the nine cities of Troy, beginning with Troy I around 3000 B.C. Shortly thereafter, between 1885 and 1900, Oskar Montelius (1843-1921) instituted the use of numbers for the designation of periods with his refinement of the European Bronze Age into five numbered phases. The study of the Sumerians was pushed ahead by the University of Pennsylvania Expedition to Nippur in southern Iraq from 1888 to 1900 under the direction of Hermann V. Hilprecht, John P. Peters, and John H. Haynes. Thousands of cuneiform tablets were recovered dealing with pre-Classical periods. In 1904 a second American expedition, sponsored by the Carnegie Institution of Washington, with Raphael Pumpelly as field director, excavated at Anau in Russian Turkestan and produced painted pottery thought to equal that from Susa in antiquity. The known horizon of prehistoric cultures had thus been extended from Egypt all the way to Central Asia, and the chronological horizon pushed far back of the Classical period.

The French, now in the remarkably creative period of the Third Republic (1870-1914), already active in Egypt, Syria, and Mesopotamia, resumed their earlier interest in Iran.

In 1891 the famous French Egyptologist and prehistorian Jean Marie Jacques de Morgan, a graduate of the Ecole des Mines and Director of the Service des Antiquités in Egypt, visited Susa during a trip around Persia on behalf of the French Scientific Mission in the country. He collected a number of painted sherds and flints at Susa, the fine quality of which led him to think that they pertained to the Elamite period. At about this time interest in Susa was renewed by the publication of Billerbeck's (1893) important summary of the then available knowledge of Susa as found in texts. Shortly thereafter, on May 12, 1895, the Government of France concluded a treaty with the Shah, Nassr-Eddin, giving to France the exclusive excavation rights to all of Persia along with one-half of all the finds made. The convention had taken three years to negotiate (having been originally suggested by Dieulafoy) under the direction of M. Réné de Balloy, Minister Plenipotentiary and Envoy Extraordinary of France. In 1897 de Morgan was appointed Délégué-Gènèral in charge of the French Delegation to Persia. On August 11, 1900, the Convention was renewed with the new Shah, Mozaffer-Eddin, giving all of the finds made in Susiana to France. The Persian government had to be reimbursed, however, for all objects of precious metals by an equal weight of the metal.

Previously, on December 18, 1897, work was resumed at Susa under de Morgan's direction with a European staff of five, increased to seven by 1903 when Roland de Mecquenem, later director of the Mission and also a graduate of the Ecole des Mines, joined the staff. Most of the staff had worked together with de Morgan in Egypt.

During the first season, the expedition had available fifteen mine wagons and, according to de Morgan's estimate, moved a total of about 18,000 cubic meters of earth. By 1905, fifty mine wagons and 3,000 meters of track had been assembled at Susa. The number of workmen rose at one point to 1,200 men, but was reduced "à cause des difficultés qu'on rencontre pour la surveillance, étant donné le personnel dont je puis disposer." Since none of the workmen were trained, an area of the Ville Royale was chosen on which to begin. This provided a training ground in what was considered to be a less important part of the site and did not present too

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big a problem in earth removal. This latter factor was important as at the time the expedition equipment had not yet arrived. This experience is still common on today's expeditions to remote areas.

Meanwhile de Morgan made a second survey of the Acropolis mound, which his visit of 1891 had convinced him was the most important of the various tells. Like his predecessors Loftus and Dieulafoy, however, de Morgan faced the eternal archaeological question of *where* to dig. At the same time he was forced to choose a location for the Mission's headquarters which would be safe from surprise attack by marauders. He remarks on this point that "circumstances obliged" him to build a chateau in 1898 on the northern end of the Acropolis, preceded by trial trenches which were then used for foundations.

De Morgan's next step in his preliminary exploration was to excavate a series of tunnels or galleries into the high vertical face of the southeast corner of the Acropolis at different heights above the plain level in order to sample the contents of the various strata. Since the strata in this area seem to lie in a more or less horizontal plane, the results of this approach gave a relatively accurate picture of the successive cultural phases of the prehistoric materials, more correct in fact than some of the reports which later followed for trenches in the open. The modern excavator will look askance at such a "tunnel" program as being "unscientific," but in all fairness to de Morgan it must be remembered that nothing was known of the deeper levels of the mound, and that he was faced with the problem of formulating and justifying an extensive excavation program for the years to follow. It was necessary for him to have some idea of the nature of the remains he was likely to encounter. He himself was under no delusions about the results to be achieved by this method.

Systematic excavation of the Grande Tranchée at Susa before World War I, using trenches 5 meters wide by 90 meters long as excavating units combined with mining railroad cars.

JACQUES DE MORGAN, *La Délégation en Perse du Ministère de Instruction Publique 1897-1902.*

> I did not give myself any illusions beforehand of the results which the underground diggings should give me; I knew that following the removal of the cube of earth that I could thus take away, I could expect to glean only indications as to the nature of the various levels of the tell, and that if luck chose that I might come across a large monument, then I would be obliged to proceed by cuts open to the sky if I wanted to make a serious study of it.

At the point where the galleries were driven in, the edge of the tell was said to be about 34 meters high. Seven galleries were designated, beginning with A, the lowest, and ending with G, the highest. Only five of these galleries were actually dug, both A and G being retained for further use if necessary. De Morgan thought that the results of this work would provide a "section" through the mound and information on the base upon which the mound rested:

> I should thus be able to obtain, by projecting all my galleries on the same plan, a cut of the tell, and be able to recognize the various levels and see if contrary to all probability, a first natural hillock existed under the center of the mound, since enveloped by the debris. The geological composition of the plain gave only very slight probability to this hypothesis; however nothing opposed the possibility of a rock outcrop, analagous to those in the environs of Ahwaz, prior to the construction of Susa.

De Morgan's difficulty in having to work with an untrained staff is reflected in his statement explaining why only fragments of pottery were recovered:

> The very method of digging used by the workmen in the execution of this type of work, permitted only rarely the removal of whole pots from the ground, should they be encountered.

From published information of the finds in these trial excavations of the first year at Susa it is immediately apparent that the major cultural phases of the pre-Classical archaeology of the Acropolis had been established and in essentially correct stratigraphic order as known from more recent excavations.

The gallery explorations were completed on January 29, 1898. It was then necessary to adopt some procedure for the major excavations to be undertaken on the Acropolis. De Morgan, like his predecessors, recognized the need for systematic work.

> I could not proceed either by soundings, as I had done previously in Egypt, nor by step trenches for investigation following the method used by Loftus and M. M. Dieulafoy. The disorder in which the antiquities were found obliged me to use a methodical procedure of digging. It was necessary to examine all the earth from the ruins, and, as a result, to organize our investigations rationally in order to obtain the best possible results from the labor which I had available, and to make the dumps a considerable distance away in order not to be encumbered by them and then forced to move them several times.

Elsewhere he says:

> Then I organized the diggings with a view to the complete exploitation of the Acropolis mound, as this was the only method to follow in order to gather the documents scattered here and there in this enormous mound of debris. We did not find ourselves, in effect, confronted by well preserved monuments which needed to be taken down; the ruins were without form and superposition of the remains of the walls showed traces of a succession of complete destructions of the town. It is in this chaos that, here and there, are found the objects which make it impossible to follow any single method to search for them. The general method of digging thus imposed itself—not keeping track of the natural levels which were indefinable and whose limits it would have been childish even to try to establish.

The rational system adopted, as indicated, was arbitrary and did not take into account the variations in the natural strata of the mound. Consequently, there has been confusion ever since as to which objects may be properly associated with which period.

The scheme adopted by de Morgan was purely geometric. He drew the "main axis" of the tell as a line cutting it in half from the north-northwest to the south-southeast. At a right angle to this axis he laid out a five-meter wide trench running from one edge of the mound to the other, which was thus divided into two sections by the main axis line. The fixed height of 34+ meters he arbitrarily divided into seven units or "niveaux," each five meters deep. (This method of stripping arbitrary levels, which may be called the "niveau method" for convenience, stands in contrast to the architectural method of excavating floor levels used extensively during the 1930's and the more recent Wheeler method of excavating natural soil units.)

The combined horizontal and vertical divisions in theory allowed the systematic removal of debris using the wagon and track imported by the expedition for the purpose. The procedure was to be first, excavation of the first trench unit to a depth of –5 meters; second, excavation of the two flanking trench units to –5 meters, and the deepening of the first trench unit to –10 meters; and so on down to the bottom. The resulting stepped effect is still plainly visible in the aerial view of Susa. The system in operation is shown in an early photograph reproduced here. The method involved large numbers of men and a Decauville railroad with dump wagons.

> I never put men along the whole length of a cut, a general attack would have required too great a number of little carriages on the same track, and this would have resulted in delays in their movement. I use about fifty men for each cut; this group attacks a slice of it by beginning at the edge of the mound, the same for the next level lower, then move on to the next slice, and so on until they have completed the whole cut.

In the process he says:

> The buildings were carefully preserved, cleared, and put on a plan, then removed, so that our work areas were always perfectly clean. This neatness is indispensible to the good working of the excavations.

The latter is a point to which all contemporary excavators would agree. Unfortunately "les constructions" meant monumental structures more often than simple buildings. In regard to small

A Proto-Elamite Account Tablet from Susa

Among the objects recently acquired by the Museum in its exchange with the Musée du Louvre is the Proto-Elamite account tablet shown above, the first of its kind in the Museum's collections. The tablet is of particular interest because the script of the text and of others like it has yet to be deciphered.

The known Proto-Elamite documents fall quite clearly into two groups. One group includes a very limited number of "monumental" inscriptions of which no more than sixteen examples are known; the second and by far the larger group, of which the tablet above is representative, is made up of economic or accounting texts and is by several centuries the older of the two groups. These accounting documents are known from Susa, in phase C*b*, where over 1400 tablets and fragments have been found in successive campaigns; from Tepe Sialk, near Kashan between Teheran and Isfahan, where a handful of texts, mostly fragmentary, was discovered; and from Tall-i-Ghazir to the southeast of Susa near Ram Hormuz. The economic texts have been dated, largely on the strength of the seal impressions which some of them bear, to the period 2900-2600 B.C. In certain respects the script of the early group of Proto-Elamite texts shows resemblances to the archaic Sumerian writing employed in Mesopotamia at about the same time during the Jemdet Nasr period, leading some scholars to postulate the development of the Proto-Elamite writing system under Mesopotamian influence.

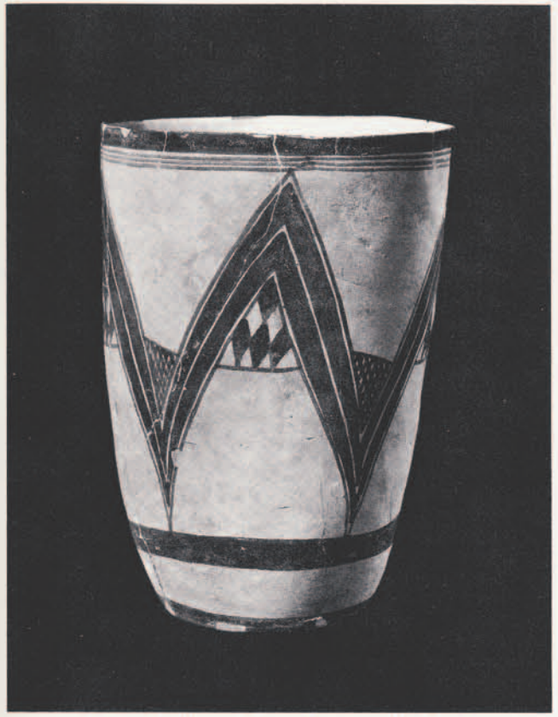
However this may be, and despite a recently proposed interpretation of the later, "monumental" inscriptions, the economic texts remain undeciphered. This is due primarily to the fact that they are probably written using only number signs and logograms (often called ideograms). Logograms are not phonetic, but rather represent entire words; thus, although it is occasionally (though rarely) possible to identify the object symbolized by a representational logogram (a horse, a plough), no idea at all can be gained of the language itself. Only the use in the accounts of a decimal system of numeration has been demonstrated with fair certainty. It has also been shown that the texts should be read from right to left across their greater dimension, and from top to bottom. The basic repertory used in writing the Proto-Elamite texts probably contained over one hundred but not more than two hundred signs, although one compilation which includes all variant forms lists some 5,529 signs.

That the documents have to do with accounts is deduced from their orderly and internally consistent entries of numbers, often along with their sums, in association with signs representing the items enumerated. The whole system is so cohesive and well developed that it bespeaks a complex and active economic organization whose records may have been the work of the personnel administering it.

Our new Proto-Elamite tablet has been assigned accession number 68-1-1. It was excavated at Susa, apparently in 1901, by J. de Morgan and has been published by the French Mission in Iran as Text No. 214. It is also briefly mentioned in an excellent recent article by William C. Brice, "The writing system of the Proto-Elamite account tablets of Susa," in *Bulletin of the John Rylands Library, Manchester* XLV, No. 1 (September 1962):15-39. The reference to the tablet discussed here is on p. 31. Brice suggests that the Proto-Elamite account texts "appear to be some kind of statistical or mercantile records."

We are especially pleased to have added to the collections of the University Museum an example of one of the outstanding conundrums still exercising students of the ancient Near East.

—Christopher L. Hamlin



Typical goblet of Susa A necropolis showing a favorite design of zigzag lines combined with geometric filling. (Right) The same goblet before repair shows the method of manufacture, involving separate piece for the base, with sides built up by hand. The light yellow-buff ware is so thin that the vessels are often taken to be wheelmade. Graves in the Necropolis commonly contained such goblets along with ring-based bowls. The cemetery has been dated to sometime between 4000 and 3600 B.C. This goblet, the bowl shown on page 32, and the jar on page 33 have recently been received by the Museum as an exchange from the Musée du Louvre.

objects de Morgan has the following to say:

> The small objects found by themselves were kept by the foremen and turned in when the workmen were paid. The finds, small or large, were all compensated for by a present of more or less importance, according to the archaeological value of the find. Nevertheless, in order to avoid thefts and to leave the workmen in ignorance about what they find, I never give more than minimal sums for the small objects, keeping larger rewards for the monuments which, by their weight, are guaranteed against theft.

This is, of course, the unfortunate baksheesh system used also in Egypt and Iraq but fortunately not elsewhere in Iran. It is appropriate while discussing the treatment of objects to include de Morgan's comments on the use to which small objects might be put for dating levels, since this attitude forms a major aspect of the thinking behind the work done at Susa during the first decade of this century. He remarks:

> As one descends successively into the ground, the levels become older. It is not the nature of an isolated object to be able to allow the identification of the age of the level, but the most recent documents which one finds, and above all the absence of objects belonging to the later periods. A find cannot be dated until, all the elements having been studied separately, one has determined the oldest pieces. One then possesses an age limit which, without being exact, is close to the truth.

Thus came into existence the Grande Tranchée at Susa the excavation of which ended with the discovery in 1908 of the famous necropolis filled with its remarkable prehistoric painted pottery, three examples of which, illustrated here,

Painted ring-based bowl from Necropolis of Susa A shows "chatter marks" on exterior where potter scraped "bone-dry" surface before firing.

Interior of the bowl shown above. The elaborate design characteristic of the interior of bowls of Susa A type has often tempted scholars to interpretations of the symbolism. None, however, have produced any very convincing arguments.

Four-lugged jar of typical late Ubaid shape decorated with brown paint in Susa A style. From the Necropolis excavated by de Morgan prior to World War I. The pattern is geometricized form of flying birds.

have recently come to the University Museum through the generosity of the Musée du Louvre.

In the course of excavating the great trench many difficulties were encountered, with little field technique equal to the task thus presented. De Morgan's collaborator Jéquier complains:

> At this depth in the tell, one finds numerous traces of buildings, consisting of walls of unbaked brick or of packed earth, made as they have been made throughout time at Susa and in the surrounding countryside. Unfortunately, the weight of the earth resting on the remains of the half destroyed buildings has made, here as all over the tell, a compact and homogeneous mass of the walls still standing and the rubble surrounding them. It is impossible, when one is digging, to distinguish the walls, and for even more reason, to follow them. It is only when one examines, once the digging has stopped, the sections which the cuts present, that, particularly after a day of rain, one can identify the traces of these vanished buildings. By slight differences of color, one can then distinguish the surfaces of the walls and even the joints between the bricks, and, lacking more precise information, all one can say about them is that the bricks of this period were similar in size to those which were used in the great period of the Elamite empire, and that the method of construction could not have been much different from that of the later periods.

At the base of the trench, beyond a mass of earth taken to be a town wall, was found the necropolis. The latter was a mound about three meters high and covered an area of about 120

square meters. The bodies were interred as fractional burials one above the other to a depth of up to five bodies. De Morgan notes that about four thousand vessels were found and guesses that at least two thousand graves were involved. Elsewhere, however, he mentions the fact that the vases were found in clusters of from three to five. A more realistic estimate, using his own statements, would have been eight hundred to a thousand graves. Such a reduced number would have been more reasonable for the space available in the butts. The dead had no orientation but were accompanied by gifts. De Morgan says these were at the head and that the body was often extended, but de Mecquenem later corrects this statement by pointing out that the bones were buried secondarily and that there was much confusion in the mound. The burials were classified as male or female on the basis of associated objects: male burials include copper axes, celts, awls, knives, or needles, and stone maceheads; females, vases, pottery ointment or cosmetic paint jars, stone or clay beads (also with males), and copper mirrors. One polished miniature black stone celt was found but shaped flints were totally absent. The small alabaster box-vases and two crude cylindrical vases of bitumen are reported. Beads included two spacers for three strands each, an imitation tooth amulet of shell, and white and grey-black beads strung alternately. The latter are imitated on long clay cylinder beads painted with black stripes. Often broken spouts from painted pots were used as beads. Cylindrical vases, sling pellets, and perforated sherd discs are also mentioned. A stud in grey limestone and a stone hoe (called a spatula) also occur. The copper tools bear the imprint of a fine and a less fine woven textile, probably of flax. Of special interest are two hemispherical seals, perforated, with animals and drill holes on the base, and a fragment of what appears to be a button seal with a pattern of incised lines.

Thus came into existence, after sixty years of exploration, the first real body of important prehistoric pottery from a known context in the lowlands of Iraq and Iran. For the next quarter of a century this material, known as Susa I, and the plain "Intermediate" wares, which overlay it and the succeeding Susa II painted ware, formed the basic sequence into which all prehistoric finds had to fit. Susa in its beginning days thus was father to the gradual unravelling of the mysteries of prehistory in this part of the Near East.

EXPEDITION NEWS

Maurits van Loon

Henrik Thrane

THE KEVORKIAN LECTURES

The Hagop Kevorkian Visiting Lectureship in Iranian Art and Archaeology was established by the Trustees of the Kevorkian Foundation to enable the University Museum twice a year to bring an outstanding scholar to Philadelphia to give a public lecture and to participate for ten days in discussions with curators and students in that phase of Iranian Art and Archaeology in which he has a special competence. The Kevorkian lecturers this year were Dr. Maurits van Loon who spoke on November 10 on *Iran and Anatolia at the Dawn of History,* and Mr. Henrik Thrane whose lecture on May 1 was entitled *Protohistoric Luristan, Problems and Facts in the Light of Recent Fieldwork in Western Luristan.*

Dr. van Loon is Assistant Professor of the University of Chicago and Research Associate of the Oriental Institute there. He obtained his Ph.D. from Columbia University in 1964 where he did his dissertation on *Urartian Art.* Prior to undertaking studies at Columbia he served in the Nederlands Foreign Service from 1951 to 1958. He excavated with R. H. Dyson, Jr. at Hasanlu in Iran in 1960 and 1962 and with Seton Lloyd at Kayalidere in eastern Turkey (ancient Urartu) in 1964. In 1964 he also conducted a survey in the Euphrates dam basin in Syria, followed in 1965 by excavations in the prepottery neolithic site of Mureybit and in 1967 at the Bronze Age site of Selenkahiye. Dr. van Loon discussed various points of contact between the art and archaeology of Urartu and Iran.

Mr. Thrane was born in Copenhagen in 1934 and studied prehistory at the Universities of Copenhagen and Cambridge, where he received his Magister Artium in 1960. In addition to participation in excavations in Scandinavia, he joined in the excavation of neolithic Knossos in 1957-58 conducted by the British School at Athens. He was prehistorian on the Danish Phoenicia Expedition 1958-60. In the latter year he also took part in the British Academy excavations at Yarim Tepe in eastern Iran under the direction of Mr. David Stronach. In 1963, Mr. Thrane worked with the Danish Expedition to Luristan on the site of Tepe Guran, and in 1964 was Field Director of the same expedition. After holding a research lectureship at the University of Copenhagen, he joined the National Museum of Denmark as an Assistant Keeper in 1965. His lecture provided an outline of stratigraphic details of the Late Bronze and Early Iron Ages in western Luristan and demonstrated how little fact and how many problems still surround the subject.