Excavations at Ur of the Chaldees, 1926-1927.¹

By C. LEONARD WOOLLEY.

THE excavations started last year on Oct. 28 and were closed down on Feb. 19. With the exception of Father Burrows, who replaced Dr. Legrain as epigraphist, my staff was the same as in the former season, Mrs. Keeling being responsible for the drawings, Mr. Whitburn for the architectural side, and Mr. Mallowan acting as general archaeological assistant; as foreman I had again Hamoudi from Jerablus, while his two sons were engaged, one as photographer, one as junior foreman. The number of workmen employed was smaller than usual, in view of the nature of our programme, and averaged about 130. The work fell into two distinct parts: the excavation of building sites, principally the houses of the Larsa period, and the examination of a large prehistoric cemetery.

The house site lay just outside the sacred Temenos, against its south-west wall. Here we cleared parts of five streets, laying bare the remains, for the most part very well preserved, of fifteen houses, enough to give us a fair idea of town-planning in the period between 2100 and 1900 B.C. Contrary to what excavations on other sites of later date had led us to expect, the houses proved to be remarkably well-built structures in burnt and crude brick, standing two storeys high, with an average for a moderate-sized house of twelve rooms. Of course the exigencies of ground space and of the owner's means introduced all sorts of variations, but throughout there was recognisable one general type. The house was built round a central courtyard on to which opened all the rooms; round this ran a wooden gallery reached by a staircase of brick below and of wood for the upper flight, giving access to the chambers of the top floor; the house roof extended over the gallery, sloping slightly inwards, and left in the centre a comparatively small opening which served as a light-well for the ground-floor: gutters round the edge of the opening led the rain water from the roof into a drain in the middle of the brick-paved court. It was possible to identify some of the rooms. The front door led into a small lobby communicating with the court; facing the entrance was the reception-room, on one side the kitchen, and below the stairs the lavatory, with a drain exactly like that of a modern Arab latrine. Altogether the arrangement and appearance of the house was precisely what one finds in the better quarters of Basra or Baghdad at the present day.

We knew already that it was the custom to bury the dead under the floors of the rooms in which they had lived; this year we found an extension of the custom in that some of the houses were provided with a regular funerary chapel designed as part of the original building; the chapel was a long chamber having at one end a

brick altar and a column of brickwork (the meaning of this is uncertain), and below the pavement of the 'nave' there was a vaulted brick tomb which acted as a family vault, some containing as many as ten bodies interred at different times. In one case, instead of the tomb there were grouped round the altar clay bowls and coffins containing the bodies of infants, more than thirty in number; it would look as if the chapel were dedicated to some goddess who was a patroness of children.

One of the most important discoveries made in the houses was that of a fallen brick arch in one of the doorways. This takes back the history of the arch as a feature of domestic architecture by several hundred years and enables us to work out reconstructions of buildings of this period (c. 2100 B.C.) in a manner for which there was before no justification in fact. We can now be sure that the arch and the vault were regularly employed in temples, and it is not unreasonable to suppose, in view of certain peculiarities of ground-plan, that in the next great building period, that of 1400 B.C., the dome also was used. The chief 'finds' made in the houses were of inscribed tablets. Many of these were ordinary business documents, but we have, besides a few religious texts, lists of the pious foundations of kings, grammatical texts and syllabaries, and mathematical tablets with such things as tables of square and cube roots, exercises in land mensuration, etc.

Work on building sites other than that of the Larsa houses threw much new light on the topography of the sacred Temenos, filling up what had been blanks on our general plan and leading to the identification of the great temple of the moon god Nannar in the time of Nebuchadnezzar; the discovery of a remarkable building set up by Sin-idinnam, king of Larsa (c. 2000 B.C.) about a mile to the east of the Temenos enclosure showed how widely scattered were the public buildings of the city and how much work remains to be done even after the excavation of the Temenos itself is complete. Further digging beneath the floors of the temple E-nun-makh, first excavated in 1922, brought to light new historical information and, amongst other objects, a set of ivory toilet instruments of fine Phœnician work and an ivory plaque bearing a remarkable Phœnician inscription.

The second part of our season was spent in the examination of a cemetery lying at the south-east end of the Temenos and inside its later walls. The graves, distinguished by their levels and contents, belonged to three periods, the uppermost to 2800-2600 B.C., the next to about 3100 B.C., the earliest to some five hundred years before that. The upper levels were dated by inscribed cylinder seals, two graves of the first series belonging to members of the household of the daughter of king Sargon of Akkad, while from the second series came the seal of the wife of Mesannipadda, first King of the First Dynasty of Ur; the date of the

¹ From a discourse delivered at the Royal Institution on Friday, June 10.

lowest graves was deduced from the very great amount of deposit separating them from the middle series and by the difference of script on the inscribed objects, this being semi-pictographic instead of fully developed cuneiform. In the lowest stratum the bodies are sometimes partly burnt, evidently a survival of an older practice of cremation; all signs of this disappear in the upper levels. The normal type of grave is a mere hole in the ground lined with matting in which the body was placed wrapped in a mat; the offerings were grouped about it and the whole covered with a second layer of matting before the earth was replaced. Later, wickerwork coffins might take the place of the simple mats, and two or three wooden coffins were found. From the earliest times clay coffins were occasionally used, and these became more common as time went on; it is curious that the clay coffins, which would seem to be the more costly form of burial, were in fact the poorest in their furniture.

The objects from the graves were such as no previous excavations in Mesopotamia have produced, and it was noteworthy that in richness, in quality, and in technique they were better in proportion as they went back earlier in time. Though we have touched the oldest dateable strata yet found (I except that of the painted pottery, about which virtually nothing is known), it is clear that we have to deal with a civilisation which if not already decadent had at least been in existence for many centuries.

Most striking are the gold objects. The wealth of precious metal found in the graves is proof of the prosperity of the age, but also it is in these things that we have best evidence of its high state of culture, for the gold was the material on which the workman lavished most skill and it alone has suffered no decay. Not only beads, pendants, and personal ornaments are of gold, but we find even tools and weapons of gold or of electrum; these must have been ceremonial rather than for practical use, but they reproduce the forms of implements

in copper and in silver. Far the finest is a dagger of gold and lapis lazuli in a sheath elaborately decorated with filigree; besides this we have a spear-head, an adze, and two chisels of electrum; the handles of such weapons were of wood covered with gesso painted red and bound with thin gold. Toilet utensils were made of the same metal—one set is in a finely decorated case—as well as in silver and copper; bowls, vases, and lamps were sometimes of silver, and one silver bowl is beautifully fluted and engraved.

Engraving on shell was fairly common: a set of plaques thus worked with animal subjects and framed in lapis lazuli and red stone was the most attractive, while a gaming-board with inlaid geometrical designs is perhaps of greater interest though of less artistic merit; a larger plaque showing a priest at sacrifice is an unusually fine example of the same technique. Ostrich eggs and sea-shells were sometimes encrusted with lapis, mother-of-pearl, and red paste. Stone vases in 'alabaster,' steatite, and limestone were very numerous, copper was astonishingly abundant, and we found one instrument of iron, this from a grave in the lowest stratum. The beads are of lapis and carnelian, very well cut and polished, and were set with others of silver and gold, the latter being often made with a thin plating over copper.

Only the pottery is disappointing in its quality. Sculpture is represented by some curious figures in unbaked clay and by a fragmentary but most important relief showing an empty chariot drawn by lions being led in procession, perhaps in the funeral procession of a king. Lastly, we have recovered a great number of engraved cylinder seals invaluable for the study of early art forms. Altogether the season's work has produced a mass of material, much of it entirely novel, the importance of which for the early history of Mesopotamia it would be difficult to exaggerate. I am glad to say that there is every reason to believe that discoveries of no less importance await us next winter.

Obituary.

WE regret to announce the following deaths:

Mr. Charles Ford, F.R.S., Superintendent of the Botanical and Afforestation Department, Hong-kong, from 1871 until 1902, on July 14, aged eighty-three years.

Prof. Chas. W. Hargitt, research professor of zoology in Syracuse University and vice-president of Section F of the American Association in 1903, distinguished for his work on the coelenterates, on June 11, aged seventy-five years.

Prof. A. Kossel, emeritus professor of physiology in the University of Heidelberg and editor of the *Zeitschrift für physiologische Chemie*, who was Nobel laureate for physiology in 1910, on July 6, aged seventy-three years.

Mr. John Macleod, F.R.S., formerly professor of mathematics at King's College, Nova Scotia, and the author of numerous original theorems in pure geometry, aged eighty-six years.

Mr. Hudson Maxim, inventor and manufacturer of explosives, of Brooklyn, New York, aged seventy-four years.

Prof. M. G. Mittag-Leffler, For. Mem. R.S., formerly professor of pure mathematics in the University of Stockholm and founder and editor in chief of *Acta Mathematica*, aged eighty-one years.

Mr. J. H. Reynolds, formerly Principal of the Municipal School of Technology (now the College of Technology), Manchester, and Director of Higher Education, who was president in 1913-14 of the Association of Technical Institutions, on July 17, aged eighty-five years.

Mr. B. Lewis Rice, C.I.E., formerly Director of Archaeological Researches in Mysore and author of "Epigraphia Carnatica," on July 10, aged eighty-nine years.

Mr. G. B. Sudworth, for more than forty years dendrologist of the United States Forest Service and author of "Check List of Forest Trees of the United States, their Names and Ranges" (1898), on May 10, aged sixty-three years.

Mr. W. S. Valiant, curator of the Geological Museum at Rutgers College, known chiefly for his discovery of Ordovician trilobites in the Utica shales at Rome, New York, on Mar. 27, aged eighty-one years.