

The Field Museum-Oxford University
Expedition to Kish, Mesopotamia
1923-1929

BY

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14 Plates in Photogravure and 2 Maps



ANTHROPOLOGY

LEAFLET 28

FIELD MUSEUM OF NATURAL HISTORY
CHICAGO

1929

The Anthropological Leaflets of Field Museum are designed to give brief, non-technical accounts of some of the more interesting beliefs, habits and customs of the races whose life is illustrated in the Museum's exhibits.

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STEPHEN C. SIMMS, DIRECTOR

FIELD MUSEUM OF NATURAL HISTORY
CHICAGO, U. S. A.



GENERAL VIEW OF THE MOUNDS AND EXCAVATIONS
From the level of the plain

FIELD MUSEUM OF NATURAL HISTORY
DEPARTMENT OF ANTHROPOLOGY
CHICAGO, 1929

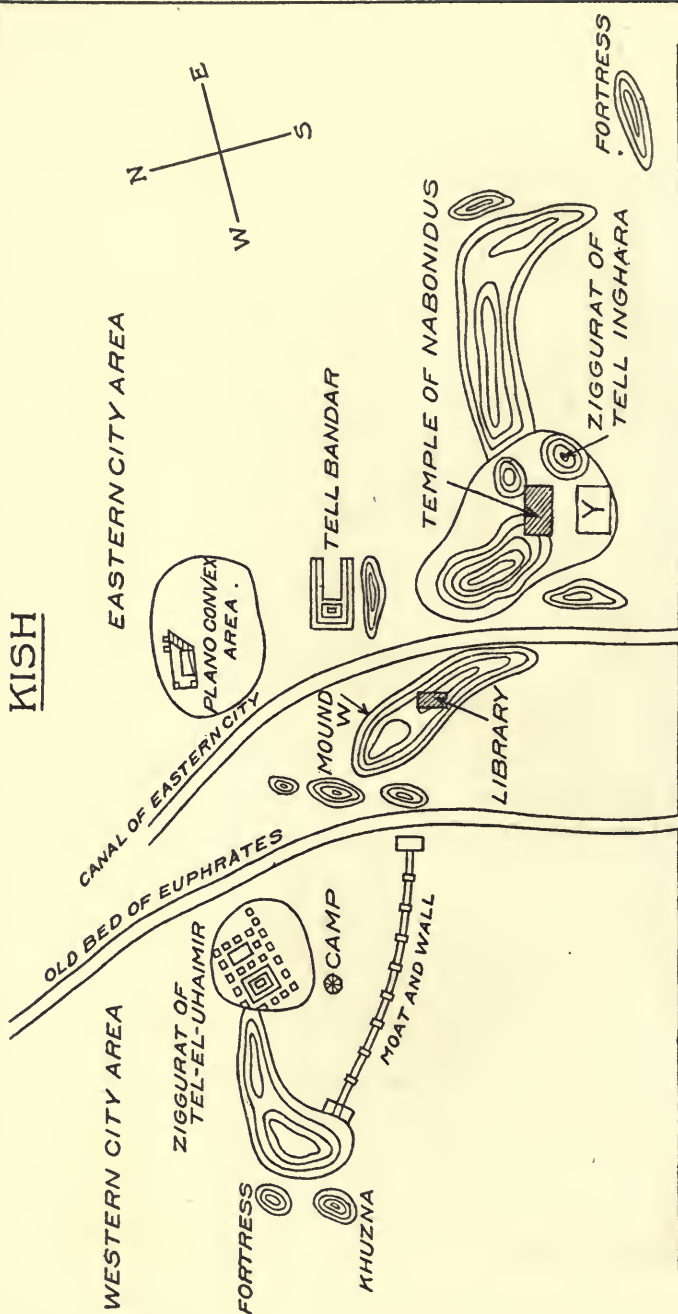
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The Field Museum-Oxford University
Expedition to Kish, Mesopotamia
1923-1929

CONTENTS

	Page
Introduction.....	3
The Temple Emete-ursag.....	5
Work During the Season 1923-24.....	6
Work During the Season 1924-25.....	7
Work during the Season 1925-26.....	9
Work at Jemdet Nasr 1926.....	11
Work during the Season 1926-27.....	14
Work during the Season 1927-28.....	17
Work at Jemdet Nasr March, 1928.....	22
Close of the Season.....	23
Work During the Season 1928-29.....	23
Methods and Technique of Excavation.....	25
Bibliographical References.....	33
Sometime Members of the Scientific Staff 1923-29...	34
Financial Supporters of the Expedition.....	34

KISH



PLAN OF THE AREA OF KISH



VIEW OVER "Y" TRENCH
The temple of Nabonidus is visible in the upper section



EXCAVATIONS AT KISH—1923-1929

INTRODUCTION

The ancient city of Kish lies between the Tigris and Euphrates rivers, about one hundred miles to the south of Baghdad, and eight miles to the east of the ruins of Babylon (see Map), which border the eastern bank of the present bed of the river Euphrates.

The modern town of Hillah stands on both banks of the Euphrates about two miles to the south of Babylon, and is a typical small Arab town, where the necessities of life can be purchased in the market. A poor desert track, which is impassable after heavy rains, leads to Kish. Leaving the palm-trees, which fringe both banks of the river, the visitor continues along this track over numerous small canal bridges for several miles, until in the distance looms the great temple-tower of western Kish, known to the modern Arabs as Tell el-Uhaimir because of the red color of the soil. Many attempts at agriculture are in progress on both sides of the track, and there is a complicated net-work of canals. After crossing the Shatt en-Nil canal one approaches the ruins of Kish, which according to tradition was the first city founded after the Biblical flood.

The ancient city was over five miles in length and nearly two miles in width, divided into eastern and western Kish by the river Euphrates, which at an early date changed its course to flow in its present channel eight miles to the west near the desolate mounds of Babylon. The great Ziggurat of Tell el-Uhaimir stands in western Kish and the vast complex of mounds called Inghara dominate the eastern part of the city. The entire plain is dotted with mounds of varying sizes, whose surfaces are covered with fragments of pottery. Generally speaking,

all the mounds to the east of Kish as far as the river Tigris, which is about twenty miles distant, show evidences of a former occupation. The small, but historically important mound of Jemdet Nasr lies eighteen miles to the northeast of Kish.

The first European traveler who visited and wrote a description of the ruins of Kish was J. S. Buckingham, who toward the end of July, 1816 accompanied by Mr. Bellino, secretary of the British Residency at Baghdad, left that city to visit Babylon. Following the exaggerated description of the extent of the city of Babylon, as given by Herodotus, they continued in an easterly direction until they reached the Ziggurat of Tell el-Uhaimir, which they imagined to be part of the city of Babylon. Buckingham recorded the numerous mounds which he visited, and expressed a particular interest in the great red Ziggurat.

Jules Oppert, the celebrated assyriologist, led an official expedition to Babylon in the year 1852, and conducted some minor excavations on the site of the city of Kish. He reported the discovery of important objects, which unfortunately were lost in the Tigris River. As there is no published account of his excavations, no satisfactory information regarding them can be obtained. For more than fifty years Kish remained untouched by explorers and almost unmentioned by scholars.

The Abbé H. de Genouillac excavated there in 1912 for a few months, and the report of his work has recently been published. It is still possible to see the trenches which he made near the smaller of the two temple-towers at Inghara.

In the spring of 1922, Mr. Herbert Weld expressed a desire to excavate some ancient Babylonian site, and he chose the ruins of Kish as offering the most important site for excavation. With the cooperation of Field Museum of Natural History, a joint expedition was formed, with Professor Stephen Langdon of Oxford University as



LOADING THE LIGHT RAILWAY TRUCKS

director. Permission to excavate in the Kish area was granted under the local Antiquities Law by the late Miss Gertrude Bell, at that time Honorary Director of Antiquities of Iraq, which is a British Mandated Territory. Since that date from November to March every year, the expedition has continued work on a large scale.

During the first season the members of the expedition lived under canvas and built several mud huts to serve as a museum and living rooms. The first excavations were commenced in the area at the base of Tell el-Uhaimir. The camp was pitched a few hundred feet to the south of this Ziggurat. Since that time an additional series of mud huts have been built to house the scientific staff of the expedition, and various rooms for equipment have been added.

THE TEMPLE EMETE-URSAG

During the first season, February to May, 1923, when Mr. Ernest Mackay was alone in the field, the temple area at Uhaimir (see Plan) was the object of the principle excavations. Work was begun on the southeastern side of the Ziggurat and on the south side of the Temenos area. The outer Temenos wall was traced nearly half way along the southern side. A great bastion built against the southern platform of the temple was uncovered. The peculiar T-shaped alcoves which break the flat surface of the wall are the same mural designs found on the outer Temenos wall at Ur. A corridor ran around the entire base of the Ziggurat and connected with rooms built into the thick wall. This distribution of the rooms or cells for the various orders of the priests of Emete-ursag seems to introduce a new element into our knowledge of Babylonian architecture. Several rooms on the northeastern side of the stage tower were excavated in the hope of locating the central shrine of the temple of Ilbaba, which lies northeast of the stage tower. A deep trench was sunk in the middle of the court to a depth of twenty-five feet when traces of

the pre-Sargonic plano-convex walls appeared, together with three fragments of black and white incised pottery. The decoration on the pottery consists of parallel bands and aquatic animals, which agrees in these two respects with the black incised ware of Telloh and Sumer. It belongs to the period about 3000 B.C. and is attributed to the second period of painted ware found at Susa.

WORK DURING THE SEASON 1923-24

In the late autumn of the same year Professor Langdon, Mr. Ernest Mackay, and Colonel W. H. Lane formed the scientific staff of the expedition. Work was begun in the region of the Ziggurat of Tell el-Uhaimir, but was soon transferred to cemetery "A", south of Tell Inghara. These low and unimportant-looking mounds proved to contain a building of early Sumerian architectural design upon a grand scale. The great outer court of this palace, with its wide sweep of alcoved walls, fine flights of stairs, and imposing row of pillars, was revealed during that season.

Among the more important objects excavated was a plaque showing the return of the conquering king of Kish. A number of inlaid figures, belonging to a series of plaques which represented rural and other scenes, were also found. The figures which are made of pure white limestone reveal a Sumerian art of great elegance and show that Sumerian artistic genius had been underestimated. Nearly all of the objects represent domestic animals, but certain numbers in the series were clearly devoted to religious scenes.

Burials of the pre-Sargonic period were found in considerable numbers in this palace. They were, in nearly all cases, earth burials. No cist graves were found there. In only two cases were traces of matting found around the body. These burials seem to have been made on the site after it had been abandoned; and this being the case, the building must have been derelict about five thousand years ago. The bodies lay invariably parallel to the walls,



NORTHWESTERN ENTRANCE TO THE TEMPLE OF NABONIDUS

which determined their orientation, but there was no rule about the position of the body.

The pottery, copper implements, and seals found there would suggest a period anterior to Sargon.

Simultaneously with this work, Professor Langdon commenced excavations with four gangs in mound "W" (see Plan) with the object of locating inscribed tablets which he knew must exist near the large temple-complex of Tell Inghara. He discovered part of an important library below ruins belonging to the Neo-Babylonian period. Numerous tablets (Plate X) bearing syllabaries and religious texts were uncovered; but, since most of the tablets were unbaked, they were nearly always in a fragmentary condition, and had to be excavated with the greatest care and skill. Professor Langdon used a solution of celluloid as a preservative for the broken fragments of tablets, which were dried and brushed before shipment to the Ashmolean Museum at Oxford, where they were baked and cleaned. Professor Langdon is publishing the translations of the tablets in the "Oxford Editions of Cuneiform Texts."

Numerous sun-dried clay coffins which contained Neo-Babylonian ornaments, and statuettes belonging to the later periods were found.

WORK DURING THE SEASON 1924-25

Mr. Ernest Mackay, field director and excavator, was during the season assisted by Mr. Talbot Rice as physical anthropologist, and Father Eric Burrows as assyriologist. The latter took the place of Professor Langdon whose professional duties prevented his absence from the University. Work was concentrated on completing the excavation of the early Sumerian palace partially excavated a year previously, and an extensive research in the vast city ruins of eastern Kish, where remarkable

discoveries of cuneiform tablets and objects illustrating the daily life of the Babylonians at the time of Nebuchadnezzar had been made during the early part of 1924.

The great "hall of columns" was excavated north of the main courtyard. A rich harvest of copper utensils, gold jewels and ornaments of precious stones rewarded the excavators in this great Sumerian palace. Copper mirrors and hair-pins tipped with lapis-lazuli knobs, as well as copper toilet-cases containing manicure sets of pincers, tongs, and nail files, together with paint dishes and remains of brushes for coloring lips, cheeks, and eyebrows, afford an intimate glimpse into the boudoir of a Sumerian lady.

These mounds seemed to have formed part of a large cemetery. The graves were simple holes of just sufficient size to take the body and funeral furniture. Owing to the compact nature of the soil, due to dampness and salt, it was impossible to distinguish between the filling of a grave and its surrounding walls. In a few cases the graves were roughly lined with bricks laid on their edges. It would seem that the graves were dug to no particular depth. The average depth, however, was about one and one-half meters. As none of the workmen could tell when they were coming to a grave, the rule was made that when pottery was encountered, they were to clear to the same level for some distance around. The large-handled brazier types of pottery were in most cases found in an upright position, and thereby assisted greatly in the location of graves without damaging the contents.

In the absence of any rule as to the orientation of the body, it is implied that the relatives of the deceased had no idea as to the direction in which the soul of the dead man was supposed to go. The lower limbs in most of the graves were in a semi-contracted position, these rarely being above the level of the pelvis. No attempt had been made to arrange the legs after the body was placed in the grave. No remains of clothing were found, although care-



TWO CHARIOT WHEELS

Just exposed after excavation. Note the animal skeletons above

ful search was made. The dampness of the soil would speedily have destroyed both linen and leather. The conclusion, however, that the clothing had once covered the bodies in the grave becomes certain from the fact that the round silver ornaments found in five of the burials were perforated with small holes to facilitate sewing them on to a garment of some kind. It was almost impossible to preserve the human bones, owing to the dampness of the soil, which had rendered the bones exceedingly fragile.

The "A" cemetery proved very rich in copper implements and tools, some of which are quite new in form. They were in excellent state of preservation, especially those from undisturbed graves. Two vessels of lead were found in the cemetery, as well as several melted fragments in several parts of Kish in buildings of the earlier type of plano-convex brick. Comparatively few silver objects were found, although the thin silver handle of a dagger and various objects of jewelry came to light. Not a single article of gold nor any trace of gold was found in any of the graves, despite the fact that it was found in graves belonging to earlier periods. It is probable that any articles made from this metal were stolen when the graves were robbed in ancient times. There were no stone vessels in any of the graves, but broken fragments were found in the same site at various levels. A rare object found in one of the graves was a cup, which had been made from an ostrich-shell, by cutting about one-third of the shell away and roughly smoothing the edge. The ostrich is still found in the Arabian desert, and is highly prized among the Beduin sheikhs (see Leaflet 23).

WORK DURING THE SEASON 1925-26

During part of the season 1925-26, Professor Langdon continued his important excavations in the library area of mound "W", where he obtained hundreds of tablets, which throw much light on the later phases of the Neo-Babylonian period.

Toward the end of 1925 and during the early part of 1926 the expedition was joined by Mr. L. H. Dudley Buxton, Reader in Physical Anthropology at Oxford University, and by myself, who was eager to study some phases of the work of excavation and more particularly to excavate the human skeletal material, which would contribute to solve some of the early racial problems. We uncovered the first complete Sumerian skeleton which had been found up to that time at Kish. Further, we measured anthropometrically about fifty of the workmen and about one hundred of the members of the Iraq army located at the Hillah Army Camp. These statistics were used for a comparison of the physical characteristics of the present inhabitants of this area with the earliest inhabitants of Kish, who lived there some 5,000 years earlier. While these figures gave important indications, it was found to be necessary to increase the numbers of both series very considerably before any definite deductions could be drawn.

Meanwhile, Mr. Mackay with eighteen gangs, was attacking the southernmost extremity of the temple-complex of Harsagkalemma—dedicated to the Earth Goddess—lying on the western side of the larger Ziggurat of Tell Inghara (Plate I). A large platform or Temenos wall was laid bare. Numerous pottery vessels and small objects were unearthed. The area, which was predicted to contain the important temple-buildings, is extremely large, and it was thought that about ten seasons of excavations would be required to remove this entire complex of mounds down to water level.

Work was commenced with one hundred and fifty workmen at plain level on the southwestern side of the largest Ziggurat. The walls of a large temple, which had been partially refaced in the time of Sargon, about 2750 B.C., were uncovered. Another building which was brought to light was a temple of the Nebuchadnezzar period with walls standing eighteen feet high. This is one of the best preserved buildings in Mesopotamia.

Walls of another building of the period of Hammurabi (2100 B.C.) were found beneath this temple. It was suggested that there might be earlier buildings at still lower levels. In the debris of the massive temple mound northwest of the stage tower was discovered a sculptured torso with feet and pedestal broken away, the head unfortunately lost. The statue is draped with a long embroidered mantle hung from the left shoulder and looped over the left arm. On the right shoulder is engraved an inscription in seven lines, the signs being made in strictly linear script, which points to the pre-Sargonic period, although the style of the costume would indicate a later period.

Early in the season a Beduin, probably one of the Baiji, from the Gezireh or desert lying between the Euphrates and Tigris rivers, came into camp and showed the staff several fragments of painted pottery which aroused the keenest interest. The Beduin stated that those fragments came from the surface of a small low mound lying far out in the desert. Professor Langdon and Mr. Mackay decided to visit this mound together with the Beduin. They took him in the Ford out into the Gezireh on a Friday, which is the Mohammedan Sunday, and the day during the week that the excavations are not in progress. After they had covered about twenty miles, the long chain of mounds, called Tell Bargouthiat, came into view, and they approached a long, low mound which the Beduin called "Jemdet Nasr" (see Map). Professor Langdon and Mr. Mackay found many fragments of painted pottery and other evidence of an early occupation. They decided to run some "trial trenches" into this mound, with the hope of discovering complete painted pots, tablets bearing an ancient script, archaic seals, and other archaeological objects.

WORK AT JEMDET NASR 1926

During the early part of January, 1926, Professor Langdon commenced excavations at Jemdet Nasr, which

is located eighteen miles northeast of Kish. In the dry season prior to the late winter rains this site is many miles from water. There is a large "kessereh" or catchment basin about one mile to the east of Jemdet Nasr which contains water after the rains. This water is suitable for drinking purposes after it has been carefully boiled.

A small reed-mat hut was constructed to house the twenty workmen with whom Professor Langdon decided to commence excavations. Hassan Jedur was in charge of the workmen, who were given one of the armed sentries from the Kish camp as protection from the lawless Beduin raiders, who roam over the Gezireh. Every morning Professor Langdon drove out to Jemdet Nasr in the old Ford, laden with food for the men, consisting of dates and unleavened cakes, and gasoline cans of water. Each day the men welcomed the professor by kissing his feet and giving loud voiced thanks to Allah for his safe arrival with their precious supply of water and food.

Work was begun on the eastern end of the mound which is about a thousand feet long by three hundred feet wide and stands at the highest point about ten feet above the level of the surrounding plain.

Almost immediately small rooms were uncovered, and several complete painted pots, as well as hundreds of fragments, came to light. Later, Professor Langdon discovered a very important series of tablets and archaic cylinder seals. Among other interesting objects excavated was a small painted jar lying against the wall of one of the small rooms. This jar, much blackened, supposedly by the fire which destroyed the ancient city, contained charred grains of wheat which are at present the most ancient in existence from Mesopotamia and which are now on exhibition in Field Museum (Hall 25). It is noteworthy that this ancient wheat is apparently identical with varieties grown at present after the lapse of more than five thousand years and a corresponding number of generations of wheat plants.



FOUR-WHEELED CHARIOT

Two wheels in background were encased in plaster for preservation

Professor Langdon continued work until the end of March under the most trying conditions. Owing to the physical strain, combined with fever, he was taken to Baghdad Hospital in a delirious condition. He was in this hospital for several weeks, and even after his return to England, a whole year elapsed before he was back to his normal state of health. He had, however, made the most important and sensational discoveries of recent years in Mesopotamia.

In the "Oxford Editions of Cuneiform Texts" published in 1928 and containing the pictographic inscriptions from Jemdet Nasr, Professor Langdon gives a detailed description and translation of these, together with the following series of deductions.

All the antiquities found at Jemdet Nasr belong to the same period. These include painted monochrome and polychrome pottery (Plates XIII and XIV) with geometrical designs, comparable to that of the second period of Susa pottery, press and roll stone seals, copper and stone implements. This site was destroyed by fire about 3500 B.C., and has never been occupied since that date. The tablets were not inscribed by means of a stylus with a triangular narrow head, but by means of a sharp-pointed instrument. In the series of available texts there is sufficient evidence to conclude that the language is Sumerian. From the few gods which appear only in the archaic period, this would suggest an early stage of religious belief very close to monotheism or belief in the existence of a single god. Only the great trinity of Earth, Nether-sea, and Sky, as well as the Sun-god have appeared. If an earlier stage of this civilization could be studied by means of other older texts, such as the famous Kish tablet now in the Baghdad Museum, Professor Langdon thinks that the sole deity worshipped in the beginning would be An, the Heaven-god. In his opinion the history of the oldest religion of man is a rapid decline from monotheism

to extreme polytheism and to widely spread belief in evil spirits. It is, in a very true sense, the history of the fall of man.

The painted pottery, found with these tablets, indicates an intimate relation with the same type of painted pottery (Susa II) found with the Proto-Elamitic tablets published by Professor Scheil (*"Délégation en Perse,"* VI, XVII). The painted pottery includes both monochrome and polychrome with geometrical designs consisting for the most part of checkered or lozenge-shaped patterns. The seals are of exactly the same type as those of Susa. Their designs usually take the form of simple crosses or groups of dots. The roll cylinder seals are of various shades of marble, limestone, green steatite, shell, and alabaster, while precious stones were never utilized. The roll cylinder seals show the same animal file motif as in Elam; fish swimming in rows, goats, geometrical designs repeated.

Professor Langdon concludes that the Sumerian civilization entered the Mesopotamian Valley from Elam in this area, and then spread southward to the shore of the Persian Gulf. Moreover, this nation is connected with the one whose press seals and painted pottery have been found in the Indus Valley at Mohenjo-Daro in the Sind and at Harappa in the Punjab.

WORK DURING THE SEASON 1926-27

In the month of December 1926 work was again resumed with some changes in the scientific staff. Mr. Ernest Mackay had joined the staff of the Indian Archaeological Survey under Sir John Marshall, transferring his activities to Mohenjo-Daro in the Indus Valley.

Mr. Louis Charles Watelin, a French archaeologist, who had been assistant to de Morgan at the excavations of Susa for many years, was appointed field director in place of Mr. Mackay. Mr. Watelin reached Kish on



COPPER REIN-RING

Found near the two-wheeled chariot. It is surmounted by the figure of a species of Equidae



December 19, accompanied by Mr. Eric Schroeder of Corpus Christi College, Oxford, who was to assist him in the work of excavation.

Mr. Watelin decided to concentrate his efforts for the next four seasons upon attempting to throw light upon the civilization and the physical characteristics of the earliest inhabitants of Kish. He decided, further, to localize his work in the central portion of the great series of mounds lying west of the largest Ziggurat of Tell Inghara (see Plan). The two main problems were the enormous amount of earth to be lifted and the distance to be traversed by the basket boys to and from the dumping ground. He decided, however, after careful deliberation, that this part of the mound would probably contain the most important buildings, and would therefore yield the most valuable cultural objects.

Following this plan, Mr. Watelin commenced work in this area toward the end of December with about 150 workers. Almost immediately the workmen came upon late Arab remains. Below these strata were objects belonging to the Neo-Babylonian period. The human skeletons, in the upper strata, were very well preserved. It was possible to use several for detailed anthropometric measurements and study.

In one portion of the mound large walls were encountered which proved to belong to a huge Babylonian temple (see Plate IV), commenced by Nebuchadnezzar in the sixth century before our era, and continued by Nabonidus whose son-in-law, Belshazzar, saw the "handwriting on the wall" referred to in the Book of Daniel. The walls of this magnificent building stand about twenty feet in height and measure about five feet in thickness. They are built of sun-dried bricks. It is amazing that, having remained covered for nearly twenty-five centuries, they were found to be as firm and secure as the day when they were constructed by those royal builders so many centuries ago.

This magnificent structure with its three huge, buttressed outer gates stands upon the top of a mound lying on the western side of the small Ziggurat.

The outer walls of the temple are marked by the T-shaped false-pillar decoration which is characteristic of Babylonian architecture. There are a spacious central shrine approached from a gate, and two antechambers. This shrine communicates with two chapels, one on the right, the other on the left. The distinctive feature about the central room is the occurrence of a cornice along the top of the walls. No statue was found in the center of the shrine. Behind one of the bricks a workman discovered a cache of jewels, which consisted of agate, lapis lazuli, carnelian, and other semi-precious stones, together with some gold and coral from the Persian Gulf. These jewels were probably hidden very hastily by a temple priest when Cyrus, the Mede, threatened to invade and destroy the city of Kish. On the northern side of the temple lies the great open courtyard, which has as yet not been excavated. It is improbable that this work will yield a single object, while it will involve an enormous expenditure of time and labor. It was therefore decided to concentrate upon reaching the lowest levels south of the temple. The brick boxes in which Nabonidus had placed his foundation deposits at various entrances to the temple had unfortunately been rifled by the armies of later invaders, although some objects of value were still found in them.

In many of the rooms on the northern side of the temple bricks were piled both vertically and horizontally against the walls. From this and other evidence Mr. Watelin suggests that this temple was never completed and that, destroyed by an invader, it remained covered by an accumulation of sand for two thousand five hundred years, until it was partially excavated by the expedition.

Toward the end of the season Mr. Watelin sank a shaft twenty feet down into the lowest stratum which he had reached up till that time, and found fragments of painted

pottery and definite proofs of a much earlier culture. In this shaft he also found a large block of stone through which a hole had been bored; this may have served as a sacrificial stone. These discoveries were duly reported to Professor Langdon, and it was decided to excavate a small restricted area down to water level during the following season.

WORK DURING THE SEASON 1927-28

Mr. Watelin and Mr. Schroeder reached Kish on December 1, 1927, and were joined by myself a few days later. Mr. Watelin decided to remove a building known as Monument Z, which he had uncovered during the previous season. This building contained no objects of archaeological interest, and lay on the western side of the largest Ziggurat of Tell Inghara. The building was removed during the month of December. It was decided to concentrate the efforts of the gangs with basket-boys, under the superintendence of Hassan Jedur, upon a section a hundred yards long and fifty yards wide. The earth was to be lifted down to water level in an attempt to find traces of the earliest inhabitants of Kish. The other group of men worked with light railroad trucks, attacking the western side of the mound north of this area, and cutting a series of trenches down to the level of the plain in the direction of the temple of Nabonidus.

The most important discoveries made during the early part of the season were some tablets just below Monument Z and the grave of a female skeleton which contained a gold band encircling the skull. Several large unpainted pots of various sizes and shapes, two alabaster jars, several copper hair-ornaments and a quantity of beads were also found in association with this skeleton.

About three feet below the level of Monument Z a thick sterile layer of red earth was found. This red earth layer appeared to cover the city at this particular depth,

and could be accurately dated by Professor Langdon, owing to the fact that a beautiful lapis-lazuli cylinder seal bearing an inscription was found just at the top of this layer. Professor Langdon decided that this cylinder seal could be dated at about 3200 B.C. Since this thick band of red earth covered the entire city so far excavated, at this particular depth, it may be presumed that everything found above must be posterior to that date, and everything below must belong to an earlier period. The red band varied from a maximum of five feet to a minimum of three feet in thickness. No objects of any kind were found in this layer. It was noted that it was mainly composed of red earth bricks lying at every angle throughout the entire stratum. It is suggested that this stratum was laid down by water caused by a local overflow of the Euphrates which at that time flowed about one mile to the west.

In the region below the red layer numerous graves were discovered. These represented an entirely different type of culture consisting mainly of stone bowls, copper objects, some fragments of painted pottery, and a small spiral of gold, while precious stones were absent. There were also coarse flint implements suggestive of a neolithic phase. The skeletal material was not very well preserved, with no definite orientation of the bodies.

In the southern corner of the trench, at a depth of forty-three feet below the original surface of the mound, a large tomb was unearthed. This contained numerous human skeletons lying in various positions, each body surrounded by numerous unpainted pots broken by the pressure of the overlying earth.

One morning Ali Daud, one of the most experienced pickmen, discovered some copper nails and the copper reinforcing of a chariot. This beautiful object is surmounted by the figure of a small member of the Equidae, probably a wild ass (Plate VII), and well demonstrates the artistic



COPPER RUSHLIGHT

The base is in the shape of a solid copper frog

attainment of the Sumerians in the middle of the fourth millennium before our era. Work proceeded very carefully and slowly in this section, and finally the two wheels of a chariot came to light. Skeletons of oxen were lying in front of the chariot, and it seemed plausible that these were the animals which drew the vehicle to its last resting-place. Each of the wheels of the chariot was composed of sections of wood joined together. These were held in place by copper nails which were embedded in a rim composed of a hard white substance. The axle of each wheel was marked by a number of copper nails which had been driven in at every angle, but which unfortunately fell to pieces upon exposure to the air.

Numerous measurements and photographs, including motion pictures, were taken of this fragmentary two-wheeled chariot, but there seemed to be positively no method of removing the wheels from the earth. We decided, however, to attempt their excavation, mainly with the idea of discovering some technique which would be of service should another chariot be uncovered at a deeper level in another part of the trench.

Several coats of oak varnish were applied in order to harden the exposed surface of the wheel whose thickness had been reduced by moisture and pressure to that of tissue paper. Sixteen coats of this varnish were carefully applied with a light brush to the central portion of the solid wheel which was in the best state of preservation. Each coat of varnish was allowed to dry, so that finally a hard, firm coating over the entire wheel was obtained. The wheel was then enclosed in a wooden box. After covering the surface with cheese-cloth to prevent adherence, plaster was poured into the box to form a solid immovable mass (see Plate VI). The back of the wheel was then carefully exposed, the box completed and filled with plaster. By these methods it was possible to remove the encased wheel by automobile to camp.

Several weeks later water level was reached. It was observed that many of the objects were in a better state of preservation as the soil became less dry on reaching the lower levels. In the center of the trench, at a total depth of forty-eight feet, more copper nails were found. Later a copper-bladed saw came to light, and finally the wheels of a four-wheeled chariot with the skeletons of the domesticated animals lying between the shafts (see Plate V). The same varnish and plaster technique was applied. After sixteen days it was possible to remove the four wheels to camp. During the process of excavation, which was particularly delicate, the wooden framework of the chariot was found, but in a very fragmentary condition. Upon exposure to the air, decay set in immediately, and within a few minutes nothing remained but darkened traces in the earth. Another copper rein-ring attached to the pole between the animals which drew the chariot was found. A copper bull figurine surmounted the rein-ring, although the skeletons of the animals prove to be members of the Equidae, probably asses. Human skeletons were lying all around the chariot. Just outside the entrance to the tomb was a man lying on his right side, with his knees flexed. He may have been the sentry left to guard the tomb.

It seems possible to reconstruct the following dramatic scene which took place at Kish some 5500 years ago. A chieftain died and was buried with full honors. Upon the funeral day the chariot drawn by stately asses and followed by mourning servants filed down into the tomb. At a given moment the shout was raised on all sides, "kill!" and both men and animals were struck down where they stood. The chieftain's servants, including the carpenter and his chariot, his most prized possession, would now be ready to serve their lord and master in the world beyond. As some such dramatic scene seemed to unfold itself before our eyes, we were consciously impressed as we stood before that chariot and realized that up to that moment it was, and is at present, the oldest wheeled vehicle in existence.



LIMESTONE PLAQUE

With relief showing a king trampling on his enemies

In later times, notably during the reign of King Nebuchadnezzar, small toy chariots were common play-things for children, numerous examples of which were excavated in the late Babylonian levels. During this season several toy-rattles were also unearthed; among those is one modeled in the shape of a hedgehog, with a clay pellet in the center. The most unique object from the lowest strata just above the present water-level is a copper rushlight. The base of this rushlight consists of a solid copper frog with naturalistic eyes of limestone inlay. The back of the frog supports a copper rod whose summit branches into five petals shaped like lotus-leaves (Plate VIII).

These leaves contain the rushes used as a primitive means of illumination. It is of interest that the early Sumerians had developed a high sense of artistic beauty.

In several of the tombs shell lamps were found. These consist of large whorled shells cut in half so that the central whorl or chamber might contain the oil, while the several spines could be utilized as wick containers.

The burials were numerous in this deep trench. No definite orientation of the bodies could be observed. Pottery and stone vessels were abundant. Numerous beads occurred with the female skeletons. There were traces of mat burials among which can be included the grave containing the frog lamp. I excavated every human bone which was in a sufficiently good state of preservation and which might throw any light on the racial characters of these early inhabitants of Kish. Fragments of more than two hundred skeletons were sent to Field Museum for future detailed study and correlation with anthropometric data on the Arabs living in Kish area at present. I obtained measurements and photographs of about 550 Arabs, which form a valuable contribution to our knowledge of the living inhabitants of central Mesopotamia.

Large coarse flint implements which were found suggested a transitional culture between a late neolithic and an early chalcolithic (mesolithic) period.

Another interesting discovery was that of a small room which contained a thin stratum entirely composed of fish skeletons. This may have been the last room containing water as the flood abated, and was thus crowded with fish eager to survive in the struggle for existence. The water evaporated, and the fish were covered with silt, and were thus preserved. A section of this stratum was brought to Field Museum, and will furnish material for an interesting study and report.

While the work was progressing in this deep trench down to water level, the railway gangs were cutting trenches into mound "B" north of "Y" trench, and were clearing toward the temple.

Babylonian pottery is common in these upper layers. There were numerous child burials in pots. The greater proportion of these pot burials were of female children. They occurred next to a long wall. This suggests the possibility that the children might have been sacrificed at the dedication of this building.

A small Sumerian limestone statue was found here by the workmen. This was undoubtedly not in its original level, and had been re-utilized by the Babylonians. No inscription was visible, either on the exposed shoulder, or on the back of the statue, which is now in Field Museum.

At the conclusion of the season the walls and floors of the trenches are levelled so that any summer excavations by local Arabs can at once be detected, when work will be resumed the following season.

Toward the middle of March work was closed at Kish after the most fruitful season since the start of the expedition.

WORK AT JEMDET NASR, MARCH 1928

In January the members of the expedition visited Jemdet Nasr, and were amazed at the amount of painted

pottery fragments visible on the surface of the eastern end of the mound. This part of the mound seemed to warrant further excavation.

Thanks to the generosity of Dr. Henry J. Patten of Chicago, work was resumed here with 180 men and boys. Owing to the trying conditions of working so far out in the desert it was decided to spend ten days with this army of workers in an attempt to obtain more painted pots, archaic tablets and seals, as well as human skeletal material. The excessive heat, the water barely drinkable, sandstorms, and a plague of locusts made these ten days at Jemdet Nasr seem very long and tedious. The work, however, was eminently successful, and much additional material was obtained.

Professor Langdon is studying the tablets and seals at Oxford, and several of the fragmentary painted pots have been restored in Field Museum (Plates XIII and XIV). Four human skeletons were found, but in a very poor and fragmentary condition. From a cursory and preliminary examination it would seem that the skulls were remarkably dolichocephalic.

CLOSE OF THE SEASON

Mr. R. S. Cooke, Honorary Director of Antiquities of Iraq, came down to Kish and chose the objects as the share for the Iraq Museum. The remaining objects were then packed and sent to Field Museum and Oxford University respectively. Several thousand feet of good motion pictures were obtained illustrating the work of excavation and form an important pictorial record of the activities of the expedition. Mr. Showket of the "Mesopotamia Studio" in Baghdad was the professional operator employed from time to time.

WORK DURING THE SEASON 1928-29

Mr. L. Ch. Watelin commenced excavations with about two hundred workmen in the early part of December.

He was assisted by his son, R. Watelin, who was also to act as photographer, and by Mr. T. K. Penniman, who was to take charge of the excavation of human skeletal remains.

From the weekly reports received during the past season by Field Museum the following information is derived.

Mr. Watelin sank a small shaft through the water which lies at the bottom of the lowest trench (Y), in an attempt to reach virgin soil. The water was removed with four-gallon gasoline cans. Virgin soil was finally reached two and a half meters below the present water level. The archaeological objects found during the sinking of this shaft were as follows: potsherds and a number of ash beds, fragments of painted pottery, some flint implements differing in types from those above the water level, also fragments of animal bones and teeth. No human bones were found in this trench.

A study of the cross section of this shaft indicates that between water level and virgin soil the city was destroyed and rebuilt three times. The periodical destruction of the walls must have been caused by local inundations. The houses, therefore, contain very few objects. It seems probable that before the third reconstruction of the city flint implements were still in use. This was certainly the case at the second reconstruction, because numbers of flint flakes were found by Mr. Watelin on the floor of one of the houses, which would indicate the chipping of the flint *in situ*. In the deepest levels the flint saw or sickle blades were found embedded in bitumen, which would prove their utilitarian purpose at this period. In the levels above, the bitumen is nearly always absent. This suggests a neolithic phase, which was reached just above virgin soil, and is an important discovery, but a larger area must be uncovered before any definite conclusions can be reached.

A painted terra-cotta Sumerian head, half natural size, was found during the season. This is probably the only example of painted statuary known in this art. Among



FOUR EARLY CLAY TABLETS
In early pictographic script, from Jemdet Nasr

other interesting objects which came to light are the copper support of a vase made of coiled copper wire in which a tall stone vase had been placed, the small model of a chariot with the four wheels embedded in bitumen, a team of six members of the horse family drawing it, and the driver standing up in the chariot. Several hundred Babylonian tablets, as well as a number of tablets belonging to the earlier periods were excavated.

Mr. Penniman excavated a quantity of skeletal material. Mr. R. Watelin assisted his father, and obtained good series of photographs. According to recent information from Professor Langdon, Mr. Watelin has found evidence of two floods, one occurring about 3400 B.C. and the other some six hundred years earlier. He further suggests that the later flood may have been the flood mentioned in the Bible.

Mr. Watelin closed the excavations about the middle of March and attended to the division of objects and the packing of cases.

METHODS AND TECHNIQUE OF EXCAVATION

There are two distinct divisions of labor among the workers, the gangs or "jokhas" who remove the earth with baskets, and the jokhas who work with light railway trucks (Plate III). Each of the former type of jokha consists of a foreman, who works with a light pick-axe, assisted by two youths whose duty is to scrape the earth into the small baskets, with which the basket-boys carry away the earth to the dump. The number of basket-boys employed in each gang varies according to the distance which they have to traverse and the speed at which the pickman can work. At Kish there are from six to eight boys employed with each gang.

During most of the season there are about twelve gangs with basket-boys employed. The foreman or Rais is responsible for the continual industry of the

basket-boys. It is his duty to report to the director of the expedition the names of any of the children who do not work with sufficient zeal.

The ages of the children who are employed vary between six and fourteen, and they work from seven o'clock in the morning until four-thirty P.M., with an hour for "bydos" or lunch. The children chant nearly all the time, so as to make the time pass more quickly and to keep each other amused. If the pickmen are making them work too hard, they will sing, "Agrab mot el Marrar, Agrab!" This means, "May the scorpion sting the pickman!" As the hour of noon approaches, they will scream wildly, "Shufna Sa'a Sahib." This means, "Look at your watch, Sahib," because they are all very hungry and tired, and do not want to work one second overtime.

The more intelligent of the children will make up a refrain about any unusual event, particularly when an animal comes within sight of the mound. A fox or jackal will bring immediate screams and wild shouts and even the sight of a donkey will cause frenzied cries of amusement. If they were not permitted to vent their feelings in this manner, they would very soon become tired and bored with the work. Further, they work much more diligently if they are all excavating in the same part of a mound. For example, if the director takes one gang or jokha and places it in a separate part of the mound, away from all the others, the basket-boys will only accomplish about half their normal amount of work, as they have no distractions, and will soon become bored with each others' company.

The basket-boys are continually watching on the ground for any small objects which may have been missed by the pickmen. It is certain that practically nothing is lost, because they bring even the tiniest beads into camp. During the seven seasons of excavation at Kish, the pickmen have become more and more proficient, and every



HUMAN SKELETON

Guarding the entrance to the tomb which contained the four-wheeled chariot

year the same men are employed. If any of them seem to be working without any interest or be in the least careless in their methods of uncovering or removing antiquities, they are sent away. A note is made against their names so that they will not be employed again. The director will expel a workman for an act of gross carelessness immediately after the event, as this is a good moral lesson to the other workmen. It is the duty of the pickmen to send one of the basket-boys to one of the Europeans the moment that he finds an object, so that the scientist can do the more skilled work of removing the earth surrounding it. If the object is excavated intact the pickman will obtain the same reward at the end of the day as though he had taken the object out himself. In this way they are glad to have scientific cooperation, because the scientists are equipped with small knives and brushes, and their work can therefore be much more delicate, and the risk of breaking the object thereby lessened.

At the commencement of the season the part of a given mound to be uncovered by each individual *jokha* is marked out by the director. Each foreman is responsible for keeping pace with his neighbors. Further, he receives a *bakshish* or reward for all the objects found within his own little area.

Below the Babylonian layers it is often difficult to distinguish the walls of buildings or rooms, as they are made of sun-dried bricks which, owing to the weight of earth above, have lost their shape and individual appearance. The Rais or overseer of the basket-boy *jokhas*, Hassan Jedur, was for eighteen years in charge of part of the excavations at Babylon with the German expeditions, and is expert at recognizing a wall merely by the feel of the blade of the pick-axe as it sinks into the earth.

Every evening the foreman of each *jokha*, which has found archaeological objects during the day, returns to the camp located at the foot of Tell el-Uhaimir to obtain

his bakshish or gratuity. The sum of \$5.00 would be the maximum amount given for any object or group of objects. The amount of bakshish is determined by the field director, and varies in proportion to the intrinsic value of the object, as well as the care shown by the pickman in uncovering the objects. For example, a tomb, containing a skeleton, unpainted pottery, stone bowls, and copper ornaments is uncovered by one of the workmen; the moment he finds a pot he sends one of the basket-boys to one of the European overseers to announce his discovery. One of the scientific staff at once visits the spot and directs operations. The ground is cleared all around to the same level, and the pickman proceeds very cautiously until finally part of the skeleton comes to light. The anthropologist stops the work of the jokha, and the director moves this jokha to another part of the trench. During the season of 1927-28 I trained one of the most intelligent workmen, named Khalef el-Jebbar, to act as assistant to the anthropologist. The earth around the skeleton is cautiously removed with the aid of small knives, scalpels, and various brushes. After several hours the skeleton is uncovered (Plate XI). Some time later, according to the various circumstances, the pottery, stone bowls, and copper ornaments are laid bare.

Several photographs are taken of this tomb group. The complicated and skilful work of removing the objects is commenced. As each object is removed, it is labelled under the tomb group number, wrapped in cotton, and placed in one of the boxes. The skeletons, particularly those found in the lower levels, are for the most part in poor condition, owing to the intense pressure caused by the weight of the superimposed earth and by the dampness of the soil. The gelatine in the bones has long since disappeared. In order to remove the bones, something must be used to replace the gelatine. Shellac or wax is generally used. This is applied with a light brush over the surface of the bones and allowed to dry and become



FOUR BREAD-MAKING OVENS
Excavated at Jemdet Nasr

hard. The bones are then removed and wrapped in cotton wool, and placed in the boxes. At the conclusion of the day the entire tomb group is taken to camp in an automobile. Individual pots and other objects are brought in to camp by the foreman of each jokha.

The payment of one rupee (about thirty-two cents) is a generous amount for a small tomb such as is described above. One anna (two cents) is given for small unpainted pots, while four to six annas may be the reward for a larger and complete pot or similar object. The main object of paying bakshish is to induce the men to be honest and not to withhold the antiquities. For example, a large object which could not be easily removed during the work of excavation is not entitled to as much bakshish as a small, though perhaps not so valuable object, such as a cylinder seal, lapis-lazuli bead, and others, which could be easily hidden in the folds of the flowing garments worn by the men and sold some time later to Jewish merchants, who would resell them to antique dealers in Baghdād. Twice the actual value is always paid for objects of gold, again to discourage theft. When a workman is caught in an attempt to steal, word is immediately sent to the chief of the local police in Hillah, who will dispatch two mounted policemen to arrest the individual and throw him into prison. This procedure also acts as a strong deterrent to theft, and thus insures honesty among the men. With these precautions it is certain that very few objects pass into the hands of the antique dealers in Baghdad.

Small objects such as beads, fragments of stone bowls or pieces of painted pottery which are brought to camp by the basket-boys receive the smallest local coin, one-quarter anna (half a cent). While the children bring many worthless fragments to camp each evening, they are encouraged to bring everything they find, and are rewarded with this tiny coin.

Every Thursday work is stopped at four o'clock in the afternoon, and the men receive their pay for the work of

the previous week. Each pickman in turn brings his jokha to receive their pay. The following wages are paid. The pickmen receive per day 1 rupee (32 cents). The shovel men receive per day 12 annas (24 cents). The basket-boys receive per day 8 annas (16 cents).

The railway jokhas are paid as follows: The pickmen receive per day 1 rupee (32 cents). All other light railway employees receive per day 12 annas (24 cents).

The total amount per week paid for the employment of about two hundred workmen is about 850 rupees (\$270). The two Rais or foremen each receive $1\frac{1}{2}$ rupees per day (48 cents).

The members of each jokha pay a tax out of their earnings to the pickman who chooses them to be members of his gang. The smallest basket-boys do not receive much for the hard work after the pickman and their relatives have taken their share of the 96 cents received as a weekly wage!

There is much confusion around camp which is, however, kept in some order and semblance of discipline by the camp sentries armed with sticks.

As the sun sinks over the western horizon outlining the dome of an Imam or shrine of a saint, the men disperse to their homes, and peace reigns once more over the camp. The silence of the night is only broken by an occasional shot by the sentries at Arabs wandering in the vicinity of the camp, which is strictly forbidden during the hours of darkness. The howling of the jackals and the barking of the foxes are the only other sounds breaking the silence of the desert night.

The objects are catalogued and numbered each evening, and a weekly report is sent to both the Director of Field Museum and Professor Langdon. From these reports it is possible to follow the progress of the excavations and to give publicity articles to the press from time to time.



LARGE JAR

Decorated with painted geometrical designs, from Jemdet Naar

At the conclusion of each season the Director of Antiquities comes to Kish from Baghdad to claim a share of the objects, under the Antiquities Law, for the Iraq Museum located in Baghdad. The objects are all arranged in groups on tables according to the material of which they are made. For example, all the stone objects are placed together, all copper objects, unpainted pots on one table, and painted pottery on another. Each group of objects is divided, object by object. The specimens are chosen alternately by the Director of Antiquities for Iraq and the field director of the expedition. When this division is finished, the objects for the Iraq Museum are packed in wooden cases and sent to Baghdad.

The late Miss Gertrude Bell was Honorary Director of Antiquities during the first few seasons, and was replaced by Mr. R. S. Cooke, who represented the Iraq Museum until 1928. In all the divisions Miss Bell and Mr. Cooke showed the utmost fairness and cooperation, and it was always a pleasure to have them visit the site of the excavations.

The division between Field Museum and the Ashmolean Museum at Oxford is as follows: Oxford obtains tablets, seals and inscriptions for publication and duplicate material for public exhibition, while Field Museum obtains the larger proportion of archaeological and anthropological material.

The objects are carefully packed in wooden cases and shipped via Basrah to Chicago and Oxford, and about April 1 each year the doors and windows of the mud huts are bricked up, and the members of the expedition leave the camp and excavations to the care of Sheikh Atiyeh and his tribe.

Feisal, King of Iraq, told me during a short interview last July that he welcomed the work of excavation within his territory. The British, who act as advisers to King Feisal and his Parliament, have always been most cour-

teous, and have definitely furthered the cause of scientific work, not only in Mesopotamia, but throughout the world.

During the past seven seasons the expedition has revealed the culture and artistic attainments of the inhabitants of Kish and Jemdet Nasr from the earliest occupation, perhaps six thousand years ago, down to the Arabs of yester-year. Thousands of museum objects have been unearthed, including the oldest wheeled vehicle in the world, many important tablets, unique examples of painted ware, and numerous other antiquities

Careful and scientific excavation extending over a period of years of a site such as Kish is the only method by which early historical facts can be accumulated. The scientific data obtained by the expedition have already thrown a flood light on the peoples and early history of the Near East, and the published reports will be of inestimable value to the scientific world.

HENRY FIELD



PAINTED JAR

Decorated with painted designs of primitive naturalistic style, from Jemdet Nasr

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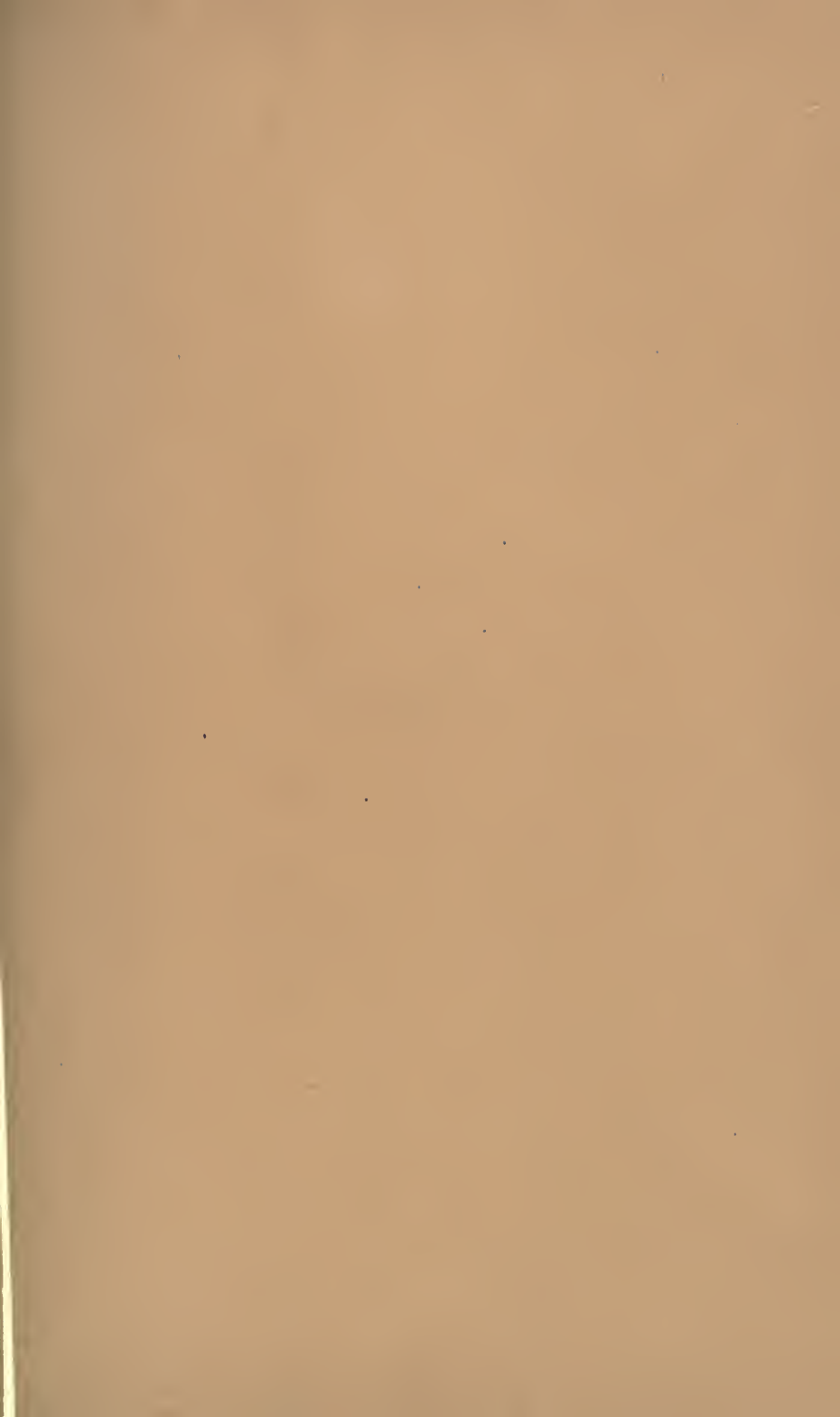
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