

SOME CITIES OF ANCIENT EGYPT.

Thebes, one of the most celebrated of the great cities of ancient Egypt, was situated on both banks of the Nile some four or five hundred miles above the river's mouths. Its Egyptian name was *Weset*, later *Nu (t) Amen*, or "the city of Ammon," while in the Old Testament it appears as *No Amon*. Thebes was the capital of the fourth nome of Upper Egypt, and while of great antiquity, it did not rise to importance until the time of the Eleventh Dynasty, which was of Theban origin. Some of its oldest and most remarkable temples and edifices date from this and the following dynasty, during which periods it was the capital of Egypt.

Thebes began the period of its real greatness, however, under the Theban princes, who expelled the Hyksos invaders and united the whole land under their sway. This was the Eighteenth Dynasty, which saw the city adorned with temples and palaces of unprecedented splendor. During the Nineteenth and Twentieth Dynasties, whose rulers followed the example of their predecessors and added to the beauty and magnificence of their chief city, Thebes by far surpassed the other cities of Egypt in wealth and splendor. Despite the persecution of its worship of the god Ammon and the desecration of its temples by the heretic King Amenophis IV., Thebes continued to flourish, for Seti I. and Ramses II. lavishly restored its despoiled temples and fanes, the latter especially devoting enormous wealth to this purpose. During the following or Twenty-first Dynasty, when it ceased to be the capital, the city began to decline and with the exception of the temporary revival under the Twenty-fifth Dynasty during the seventh century B. C., Thebes gradually but surely sank into insignificance, overshadowed by the rise of new cities, even though its temples were repaired and some new buildings were erected during the reign of some of the latter monarchs, especially the Ptolemies. War, earthquakes, and time completed the destruction, and even in the day of the geographer Strabo (B.C. 24) Thebes was a ruined city as at present.

The city proper lay upon the east bank of the river, between the great temples whose ruins remain to-day at Luxor and Karnak. On the west side of the stream

were extensive suburbs and many palaces and memorial temples, among them those of Ramses III., but in general this side of the river was devoted to the great necropolis, which extended to the Libyan range. The necropolis formed a great city, with its temples and their attached dwellings, schools, stables, storehouses, and other buildings and the dwellings of the numerous artisans employed in the great "city of the dead." The rocky hills bordering the plain were honeycombed with tombs, among them in a narrow

mids, they were intended only for the reception of the sarcophagus. Their structure was practically the same in all. Three corridors, placed one beyond the other, led into the innermost chambers. Small side-chambers sometimes opened off the first corridor; oblong recesses were made at the top of the sides of the second; and small recesses for the reception of the furniture of the dead were provided at the end of the third. The anteroom opened off the third corridor. Beyond this lay the main hall, which contained the massive granite sarcophagus deposited in a hollow in the floor. The roof of this main hall, which was frequently adjoined or even preceded by other chambers, was often supported by pillars.

The walls of the tombs from the entrance to the inner chamber were invariably covered with sacred pictures and texts, executed in bright colors or engraved upon the rock. It was considered essential by the ancient Egyptians that the dead have a knowledge of the information conveyed in these mural decorations, for their future lives. As our next illustration shows, a splendid example of tomb painting of this character is to be seen in the mortuary chamber of Prince Sen-Nofer of Thebes, a dignitary of the Eighteenth Dynasty and overseer of the Gardens of Ammon. It is one of the tombs of Shêkh Abd el-Kurna to the southeast of the Valley of the Kings' Tombs. This splendidly preserved tomb has been explored within recent years. It is distinguished by the beauty and freshness of its paintings, which are all of religious import. The photograph was taken in the innermost or main chamber, and shows two of the four massive columns supporting the room.

In the Valley of the Kings' Tombs shown in the first engraving, the large rectangular opening cut in the hillock sloping up to the cliff which directly faced the camera, is the door of the tomb of Ramses IV. Before it, to the left, are the remarkable tomb of Sethos I., and that of Ramses XI. To the left are also the tombs of Ramses III. and of Amen-meses, a pretender to the throne during the Nineteenth Dynasty. To the right, but hidden by a hill in the foreground, are the tombs of Ramses IX. and of Ramses II. Many other tombs to the number of over forty—of which twenty-five or

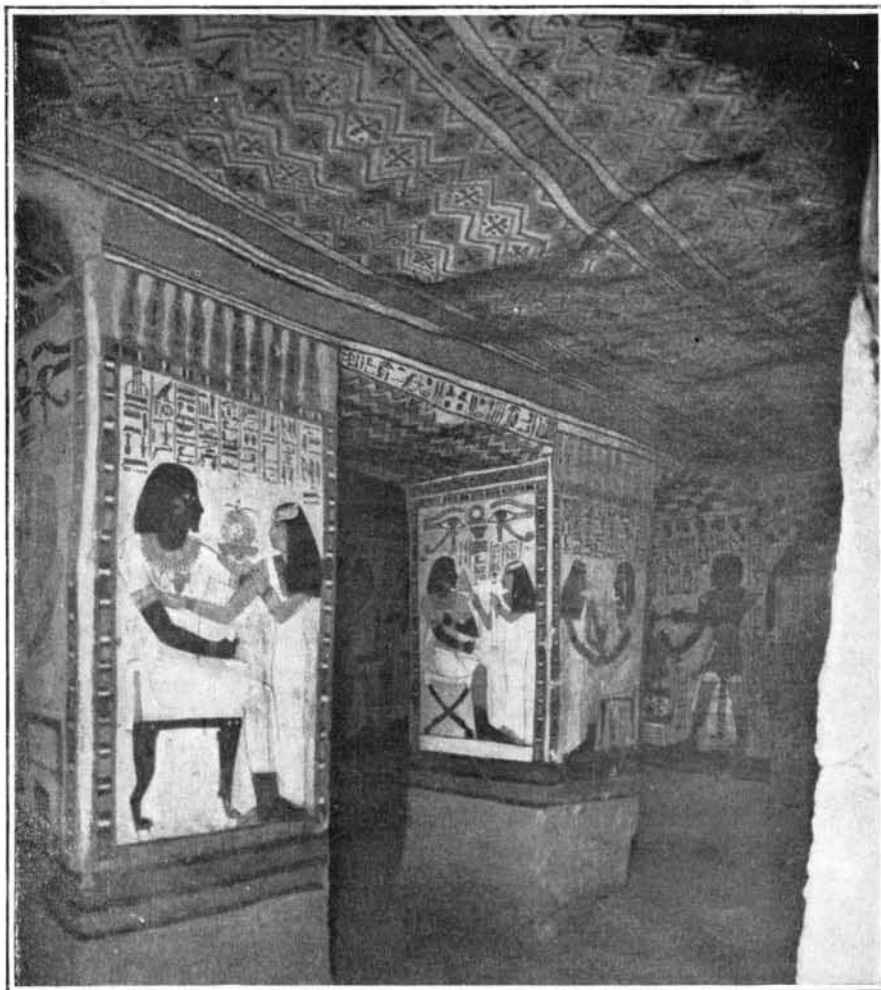


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Brick Store-Chambers of Pithom, the City Built by Hebrew-Bondsmen, Looking North—Egypt.

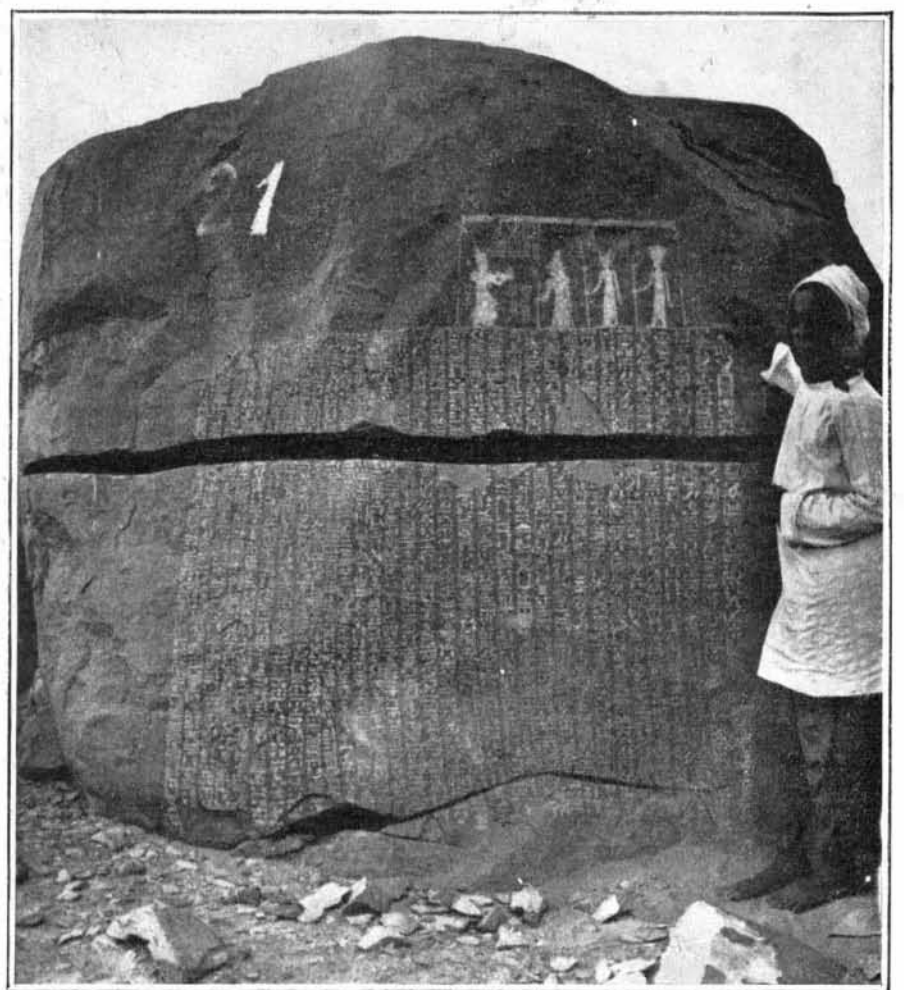
valley the tombs of the monarchs of the Eighteenth to Twentieth Dynasties. The mortuary temples in the plain were dedicated to the manes of the dead, and commemorated the lives of their royal builders, while the tombs proper, which contained the embalmed bodies, were the above-mentioned rock-hewn chambers.

The first of the illustrations is a photograph of this Valley of the Kings' Tombs. These usually consist of a series of passages and chambers hollowed out of the living rock, and, like the corridors within the pyra-



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Painted Tomb Chamber of Prince Sen-Nofer in the Great Theban Necropolis, West Shore of the Nile, Egypt.



Remarkable Description of a Seven Years' Famine Found on the Island of Sehel, First Cataract, Egypt.

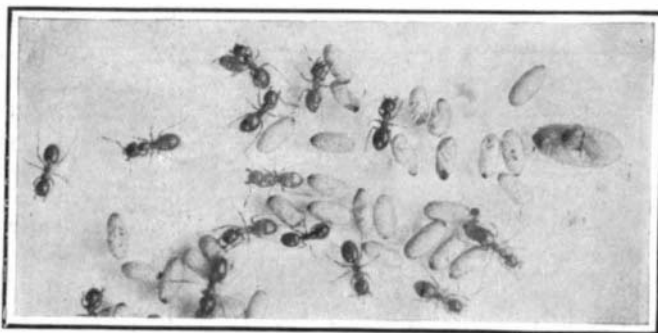
more are accessible to-day—are to be found in this portion of the great necropolis, which to-day is known under the native name of Bibân el-Mulâk.

The excavations conducted by Henri Eduard Naville at the site of the ancient city of Pithom in the Nile Delta are among the most interesting of the delvings into the hidden story of Egyptian history. Pithom, the store city of the Pharaohs, a fortress outpost at the edge of the desert for the armies of Ramses II., its founder, and his successors, was built by the Israelite bondsmen. It lies between Ismailia and Tell el-Kebir in the Wâdi Tûmilât, on the south side of the sweet-water canal from Cairo to Suez.

A few blocks of stone and a monolithic statue were described at this locality by the French engineers who surveyed Egypt at the end of the eighteenth century, but during the next fifty or sixty years all these traces of the historic city had vanished, the blocks being either removed or buried in the shifting sands, and a barely discernible mound or undulation in the desert and the traces of ancient canals were all that marked the site of ancient Pithom. In 1860 a thriving European and native town sprang up because of certain French canal-engineering work. The natives called the place Tell el-Maskhûta, while the French engineer designated it Ramses, through an error of the Egyptologist Lepsius, who believed it to be the site of the ancient city of that name. At the completion of the French undertaking, the town was abandoned, and again soon fell into ruins. During its construction and existence, however, sufficiently strong indications of the presence of archaeological remains had been discovered to induce Naville to conduct excavations, primarily for the purpose, if possible, of determining the route followed by the children of Israel in the Exodus.

From the objects discovered, it was soon proved conclusively that the Egyptian city had been not Ram-

engraved upon its rocks and cliffs. It also contains the remains of an ancient quarry, for it was from this region that a great part of the granite rock was procured by the Egyptians for their tremendous architectural and engineering undertakings. One of the temples dates from the time of the Eighteenth Dynasty, the other, which is near the village of Sehêl, on the west side of the island, from the Ptolemaic period. The inscription of the illustration, of the same date



Workers, Queen-Cocoon and Worker-Cocoons of *Lasine lalipes*.

as the second temple, is found high up on the southeastern rocks. The hieroglyphics, which are in a fairly good state of preservation, record that in the reign of the primeval king, Zoser, the Nile failed to rise during seven successive years, and that in consequence, a terrible famine arose in the land. This was relieved by a great inundation following the prayer of the king to the cataract god Khnum.

TENACITY OF LIFE IN ANTS.
BY ABEL M. FIELDS.

Among the insects, ants are remarkable for their longevity. A queen in an artificial nest of M. Charles

more, the last survivor among the decapitated ants having lived forty-one days.

In my nests, no ant has ever been maltreated by its fellows because of its being maimed. Those deprived of some part of the body have been returned, after their recovery from the surgical operation, to their former habitation, and in no case has the cripple received extra attention, either hostile or benevolent.

SUBMERGED ANTS.—When ants are submerged, they cease to struggle after a few minutes, sink to the bottom, and appear to have died. But they may remain in water several days and afterward recover all their activities when dried. Some carpenter ants that I merged for eight days in distilled water at a low temperature revived on being removed from the water, and after a few days resumed their usual occupations in the ant-nest.

This ability of the ants to recover from drowning explains the existence of ants in areas subject to freshets that destroy all other land insects.

FASTING ANTS.—Although ants manifestly suffer and soon die if deprived of moisture, they can exist for considerable periods without food. Experimenting with seven species of ants, small and large, I found that my ants could continue their common activities for several months with no nutriment whatever. The ants were kept in glass cells that were frequently cleansed with alcohol, and were empty of everything except the ants and a bit of sponge saturated with distilled water. Several of the ants lived for seven months in enforced fast, the longest fast being that of one of the common gray ants, a *Formica subsericea*, who lived nearly nine months without food. The fasting ants walked about, and appeared to be in normal health up to the day of death. Such capability to live without nutriment explains the curious fact observed by travelers in deserts, that ants inhabit places



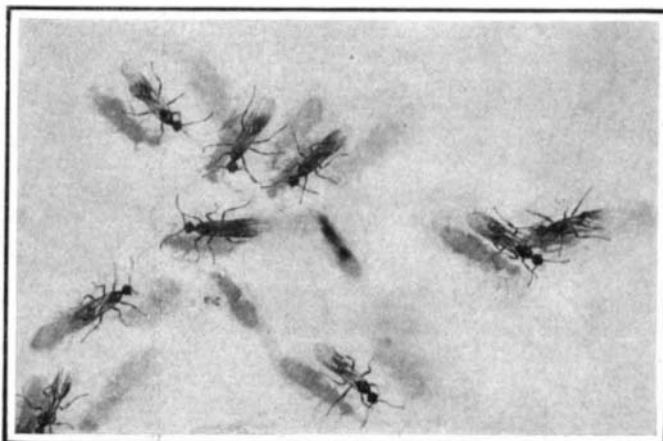
One Worker Regurgitating Food to Another.

ses, but Pithom. Moreover, as was soon learned from numerous inscriptions, later, during the Greek Dynasty, it was changed to the Roman city of Heroôpolis, a name which was abridged to Ero.

Pithom, the city proper, consisted of a large square area inclosed by enormous brick walls. The temple, strangely enough, occupied only a small space in the southwest angle. It, too, was inclosed by heavy brick walls. While considerable limestone had been used in the building and ornamentation, the principal material consists of the usual unburned, sun-dried Egyptian brick. Before the excavation had been under way very long, numbers of thick walls of the crude brick mentioned were uncovered, the bricks of which, joined by layers of thin mortar, had been made without straw. The walls, as shown in the accompanying illustration, rested on the sand and were well made, from two to three yards in thickness and evidently originally of considerable height. They formed rectangular chambers, which had no communication with each other. In the walls, about two yards from the bottom, were holes, probably for timber cross-pieces or floor beams. There were no door or window openings, the contents evidently placed within or withdrawn through the tops, which may have been closed by wooden roofs or merely by awnings.

There is little doubt that these vastly interesting structures were used as the storehouses and granaries of the Pharaohs, for the armies and caravans traveling across the desert, and that they were built by the Hebrew bondsmen. Much corroborative evidence, too, has been produced that Ramses II., the founder of Pithom, was the Pharaoh of the Oppression. Indications, also, of the route of the Exodus were uncovered in the ruins of this fascinating old city.

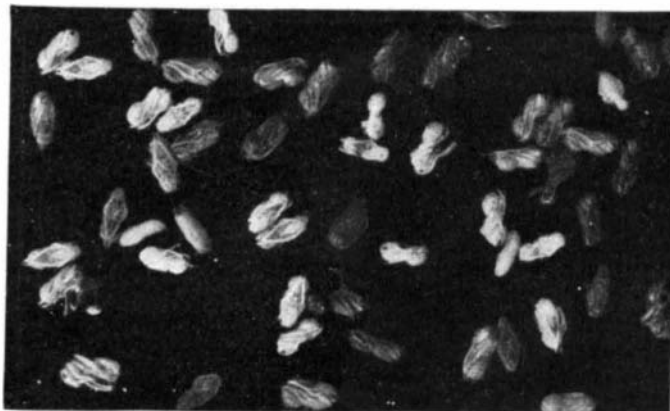
The fourth engraving is of a famous rock inscription found on the island of Sehêl, below the first cataract of the Nile. Sehêl was dedicated to the god Anukis, and contains the ruins of two temples. Besides, over two hundred inscriptions have been found



Male Ants. (*Stemma fulvum*.)

Janet's lived there to her tenth year, while two queens under the observation of Sir John Lubbock lived, the one into her fourteenth, the other into her fifteenth year. Worker ants in my nests have lived four years after capture, and then been returned to their native soil without having given sign of senility.

MAIMED ANTS.—Ants deprived of a portion of the body show great tenacity of life, but do not regenerate the missing part. After loss of the abdomen they sometimes run with great speed, continue to take care of their young, and to fight with enemies, and appear to be unaware of their own defect. A small brown ant-queen in my formicary lived fourteen days without her abdomen, and was seen to eat. Though the



Larvæ and Pupæ of *Formica subsericea*.

TENACITY OF LIFE IN ANTS.

whole domestic economy of the ant is dictated and dominated by the sense of smell, the antennæ, which are the organs of that sense, may be cut off, and the protected ant may exist without them for fourteen months, as did a queen in one of my nests.

In experiments made by me last year, in which the surgery was carefully aseptic, and the patients were kept at low temperature in a clean ant-hospital, headless ants continued to walk about for a month or



Camponotus americanus. Two Queens, One Winged, One with Wings Removed.

where they are subject to a complete annihilation of their food supply during long periods of drought.

Among my fasting ants no cannibalism was practiced, and the bodies of those that died were always found to be intact.

Food is, however, necessary to the ant-larvæ, the quantity and quality of the nutriment taken while in the larval stage determining the size of the ant within the limits of the species. The larvæ, when the food supply is deficient, may live a year or more in the larval state, with scarcely any visible growth, apparently waiting for better days. In prosperous times the larval stage may occupy but twenty days.

DWARFS.—I have reared many dwarf ants by suddenly cutting off the food supply from well-nourished and half-grown larvæ. The feeding of the larvæ may be stopped by a removal of nearly all the ant nurses that ordinarily furnish food to the undeveloped young, or by depriving the nest of foraging facilities. Under propitious conditions, the larva, fed by the ants, grows to the length of an adult, expels the contents of the alimentary canal, and eats nothing for the five or ten days preceding its pupation. But if suddenly deprived of food, it may enter the resting stage when but half grown, and ultimately become a perfectly formed dwarf ant. To exist as dwarfs is better than no existence at all, and the ants take the better possibility in the great struggle for life.

REGURGITATION OF FOOD.—An advantage accruing to the ants through their commercial life is that of individually receiving food containing a great number of chemical elements that would not be obtained by individual effort. The ant-workers go out to forage in all directions, one imbibing nectar, another fruit, another oil, another insect or animal juices; and all the foragers return to the nest, bearing in their crops an over-supply which is regurgitated to those who have stayed at home. Regurgitation of food is common among the ants, and I have seen an ant that had fasted so long as sixty-two days regurgitate food to a hungry sister. The regurgitating ant holds the globule of pabulum at the end of her tongue, while the recipient laps it therefrom, assuming a posture that facilitates such action. This interchange of food-stuffs must

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VALLEY OF THE KINGS' TOMBS AT THEBES, WHERE THE MONARCHS OF EGYPT OF THE XVIII. TO XX. DYNASTIES WERE BURIED.—[See page 362.]