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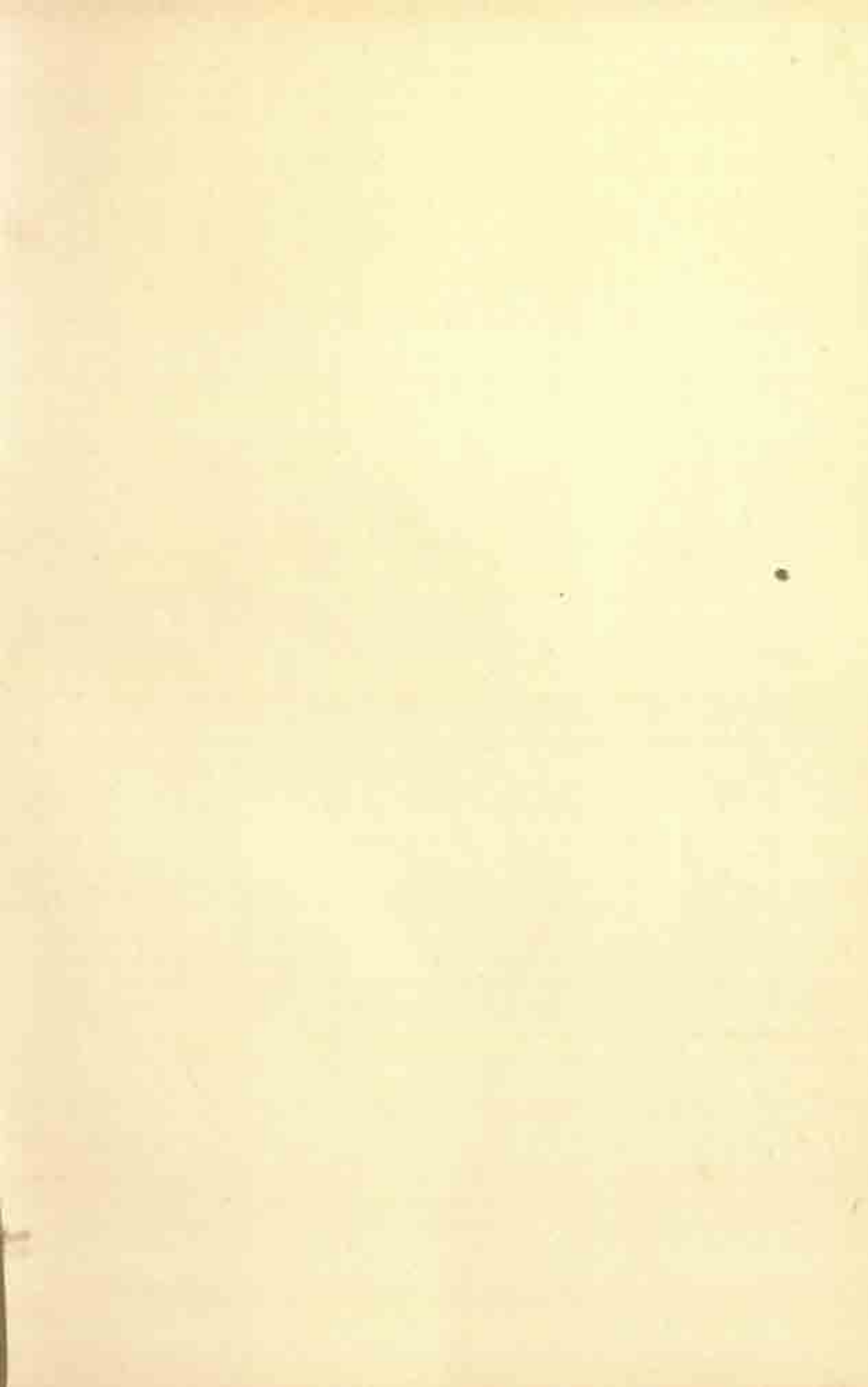
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ANCIENT EGYPT.

THE WATER LILIES OF ANCIENT EGYPT.

IN this paper we consider what was described in an offering to the Sun-god Horus at Denderah, as "the flower which was in the beginning, the glorious Lily of the great water."

Much confusion exists among writers on the subject from the time of Herodotus onwards, and it has been rather an interesting puzzle to unravel some of the errors which have been copied from one work to another. The best accounts are those by Raffena-Delile about one hundred years ago, and more recently Goodyear and Conard, the latter of whom has cleared up many obscurities. It seems as if the botanists on the one hand had ignored the archaeologists, and these in their turn did not appreciate botanical distinctions. Hence arose confusion. Architects are worse still, for I once asked a distinguished ecclesiastical architect to tell me something about lotus and papyrus ornamentation, and his reply was: "Oh! *we* call them all papyrus"! We hear people speak of the "sacred lotus of Egypt," whereas no lotus was anciently so called; others tell of the sacred lotus of India or Japan, which is not a lotus at all, but belongs to another species. I want as far as I can to clear this up, and then to describe why and how the various water lilies have been used so as to enter largely into the life of Ancient Egypt.

The Nymphaeas or water nymphs all belong to the botanical order Nymphaeaceae, and of these none were confined to Egypt. The sacred lily of Japan belongs to another order, the Nelumboneae, and is quite distinct, and has not been seen in Egypt for a very long period, though Herodotus describes it as growing there when he wrote 2,300 years ago. Although most of them have disappeared, both the white and blue water lilies are to be found in the still waters of the Delta of the Nile to this day, and in some places much farther south. In England we have two representatives of the same order, *N. Alba* and *Nuphar Lutea*, which are familiar enough: but our progenitors of 6,000 years ago do not appear to have discovered their artistic potentialities. The Nymphaea (Figs. 3, 22) has a large leaf cleft nearly to the centre, like our pond lily, floating on the water. The bud has an envelope of four calyx leaves or sepals, which entirely encase the bud until it opens: and as it expands the more delicate texture and colour of the flower shows itself. In this way, when seen from whatever point of view, the opening flower shows three dark green spikes, symmetrically divided, forming a background to the coloured petals. As the bud expands, the sepals curve downwards. The ovary has a rayed stigma of bright yellow colour, from the base of which numerous flattened yellow stamens diverge. When the flower comes to

seed, the ovary becomes bulbous, like a poppy (Fig. 51), and sinks under water; whereas, during the period of flowering the stem is erect. The leaf stalks spring from the root (Fig. 17), and the leaves always float on the surface. The seed pod is like that of the poppy, having a similar rayed stigma (Fig. 51), and containing within it numerous dark small seeds.

The White and Blue Lotus.

The two *Nymphaeas* found in the palmy days of Ancient Egypt were the *N. Lotus* and the *N. Caerulea*, *i.e.*, the white and the blue varieties. They vary somewhat in form and in their habits; both were extensively used for decoration, as I shall describe later. The blooms of the *N. Lotus* (Figs. 4, 6, 7) are fragrant, the odour being "piquante," usually pure white, but there is a variety termed *Rosea* (Fig. 5) with rose-coloured petals found among them. And in one of the coloured wall paintings of an early dynasty I find this clearly depicted. There is a specimen in Kew Gardens marked *N. Lotus*, of a lovely red throughout, except the stamens which are yellow and spring from the summit instead of the base of the ovary.

The *N. Caerulea* (Figs. 1, 2, 3) is what is called a heavenly blue, and that, too, sometimes shades off into pink just as our forget-me-nots have a trick of doing. The odour is extremely sweet and "suave" (Savigny). The white lotus opens in the afternoon or evening and closes by mid-day, whereas the blue *nymphaea* opens in the morning and closes at night. The Moon has been styled, "the lover of the lotus," *i.e.*, the night-blooming one, on this account.

The Red Lotus.

There is another *Nymphaea*, the *Rubra*, the red lotus of India (Fig. 18), confined to British India and Bengal, which has the same characteristics, the only difference being that the stigma is sixteen- instead of eight-rayed. It is of a brilliant ruby colour throughout, and is the lotus of the Hindu *padma* prayer, "as the full moon with its mild light opens the buds of the water lily." The blue and white forms (Cunningham) remain more or less above water for a period of four days. On the first of these the flower appears as a bud just rising above the surface: on the second it is half open and quite clear of the water; on the third it is fully open and still more elevated: on the fourth it remains fully expanded, but rests on the surface, and on the following day it is quite submerged. The mature flowers remain tightly closed during the day, and are wide open all night, until about ten o'clock next morning, when they are completely shut until late in the evening. The *N. Rubra* flowers keep their petals open above the water for five days, and closed at night, then sink under water without shedding them.

The Japanese Nelumbium.

Now the sacred lotus of Japan, which has been erroneously called also the Egyptian lotus, is different in many respects (Fig. 8). The *Nelumbium speciosum* formerly grew in Egypt, according to Herodotus, though some modern writers dispute this. Delile however supports his statement that it was so. Called by the Ancients the "Bean of Egypt," it is best known by its peculiar obconical receptacle, which has been likened to the rose of a watering can, or a pepper box, which remains erect out of the water. The leaf stalks spring from the root, having large peltate

leaves centrally fixed, and the long flower stalk rising several feet out of the water bearing a large, solitary, fragrant flower of pure white, or bright rose colour. Some are white with rose tipped petals. The bud has a series of overlapping sepals like



7. *NYMPHAEA LOTUS.*

Outline of type specimen in Smith's Herbarium, Linnaean Society. 4/5 size.

scales, not of uniform size: and does not therefore show the characteristic three sepaled appearance of the lotus. The calyx leaves drop away and disappear as the flower opens, leaving enormous white or pink corollas like single peonies, shining

out among a dense mass of large round leaves. The dried stalks of the leaves of the Nelumbo were used to make wicks for the lamps in the Chinese and Japanese temples,—possibly also in Egypt.

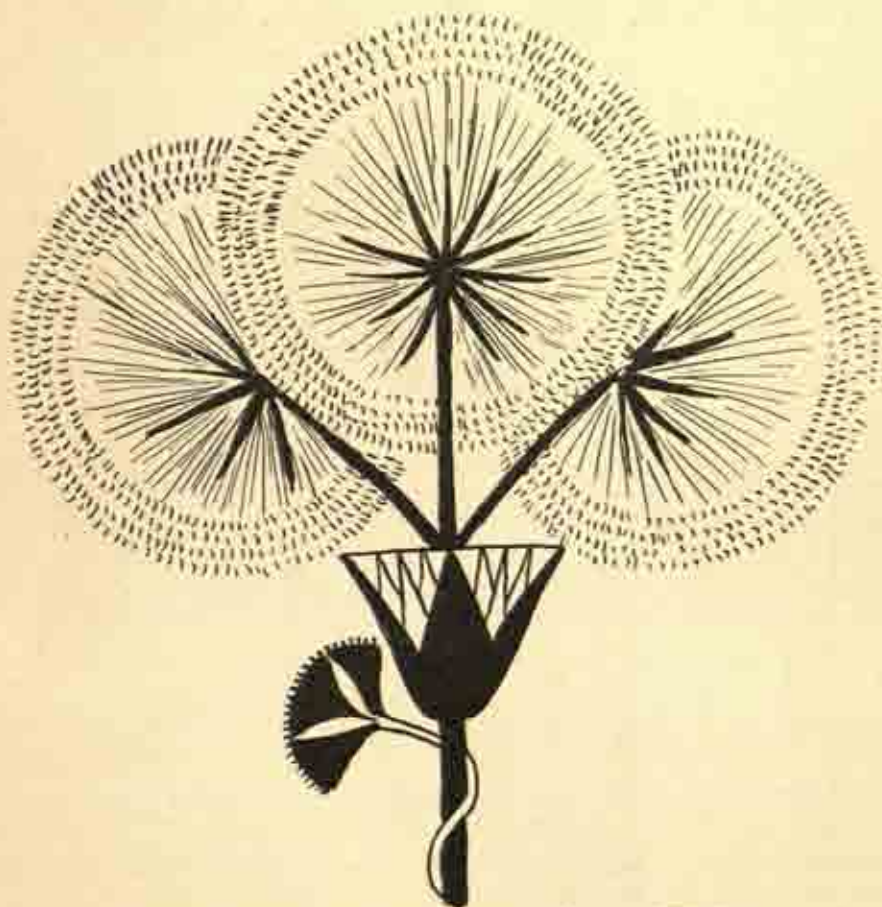


N. NELUMBUM SPECIOSUM, SACRED LILY OF JAPAN.
Red flower. $\frac{1}{3}$ size.

The Lotus Seeds.

The seeds of the Nelumbium are about the size of small acorns, pleasant to the taste and used for food, but not to the same extent as the seeds of the Nymphaea, which are still used in Egypt and West Africa. The loaves made from the seeds and roots in Egypt were termed lily loaves, and appeared on the tables of the

Egyptian kings of the XIXth dynasty. They are very nutritious and contain starch, proteid, and oil; the tubers are almost solid starch, and are eaten boiled or roast, like potatoes. Sonnini (*Travels in E.*, 1777) says, in his day they were sold ready dressed and at a very low price in the streets of Rosetta, where the lower class of people ate them in large quantities. Only the seeds of the lotus and blue lily are said to be so used in Egypt. They are prepared by the fruit being laid in heaps until the soft parts decay, the seeds and kernels are then easily separated, washed clean, dried and stowed away to be ground in hand mills,



9. THREE PAPYRUS HEADS ARISING FROM A LOTUS. (Wilk. 611.)

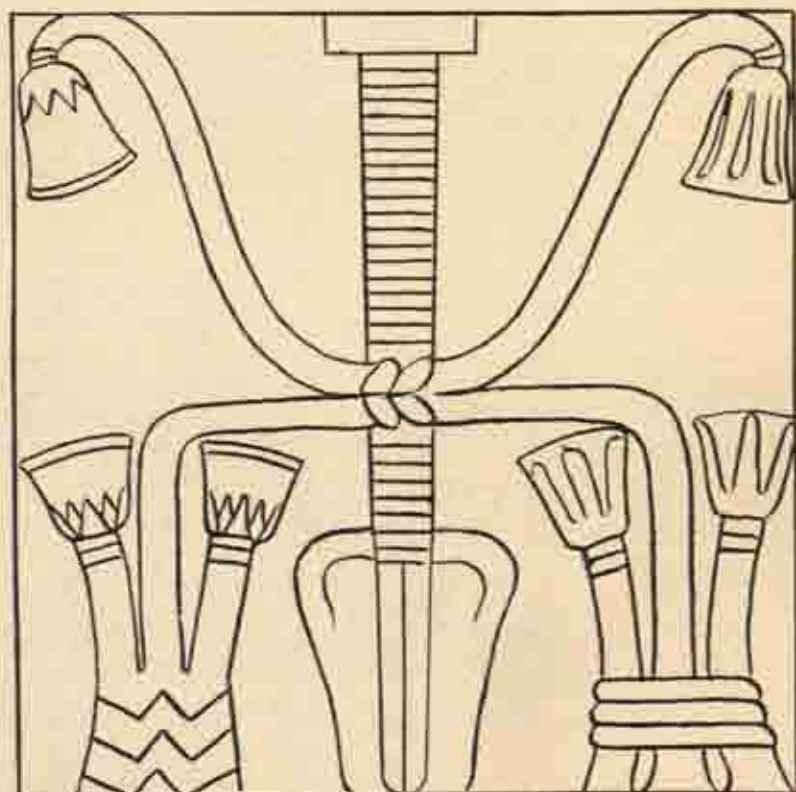
The use of the seeds in making bread, and the mode of sowing them by enclosing in a ball of clay and throwing it into the water may probably explain the text, "Cast thy bread upon the waters, for thou shalt find it after many days." The lotus seeds come up annually: the *Nelumbo* takes from five to seven years sometimes to germinate (Sir David Prain). The fable of the nymph Lotis who was transformed into a tree bearing her name is in no way connected with water lilies. This lotis or lotos tree (*Zizyphus lotus*) is a moderate sized, thorny tree with reddish fruit containing a sweet nut, the jujube tree, from which a "divine nectarous juice" was made. Homer tells us that when Ulysses sent his men to see what the "melancholy, mild-eyed lotus eaters" were like,

"What man of themsoever of that sweet thing did eat
 Had no will to bear back tidings, or to get him back again ;
 But to bide with the lotus eaters for ever was he fain,
 And to eat the lotus for ever, and forget his returning day."

(W. Morris' translation.)

The Artistic Adaptations.

The Nymphaea lotus is the one flower of all others which probably gave birth to Art as we find it exemplified in some of the most ancient monuments. A study of it will give the key to the adaptation of the beauty of plant form to all kinds of decorative work up to the present day.



10. LOTUS (LEFT) AND PAPYRUS (RIGHT) KNOTTED AROUND THE SIGN OF UNION,
 SYMBOLIZING THE UNION OF NORTH AND SOUTH EGYPT.

From the Throne of Khofra, the earliest example.

But I ought to say a word about another plant which is closely associated with the lotus in Egyptian Art, that is the papyrus, which entered largely into the decorations of the ancient Egyptians. The large fan of the papyrus head is here grouped with the lotus in Fig. 9. The *Cyperus papyrus* grew in great abundance in former days in Egypt and, as a Government monopoly, was a source of considerable revenue. Its use for making paper can be dated back to the IIIrd dynasty. It ceased to be used for the purpose about A.D. 700. Besides being copied for ornament, it was sometimes used to deck the statues of the gods, as well as for food.

The very name of water nymph seems to denote a mystic origin, and we shall find how closely the lotus in its various forms has been associated with sacred symbols and conceptions of purity and beauty, from the days when it was adopted

by the ancient Egyptians many thousand years ago. The plant remains the same as then: the beauty it has given birth to survives also.

Although the *Nelumbo* has been spoken of as the Egyptian lily, we find no evidence of its having been employed in the decorative work of that country, except on very rare occasions, at any period of its history, as it was less adapted for artistic work than the white and blue *Nymphaeas* were.

It has struck me as a curious fact that the more beautiful of these plants should have found no permanent place in the monumental records of Egypt; and



11. THE UPPER AND LOWER NILE HOLDING THE PAPYRUS AND LOTUS STEMS, TWISTED AS IN FIG. 10. Statue of *Rameses II.*, *Luxor.*

the only explanation I can offer is that the inherent beauty and grace of the outlines of the *Nymphaea* have, by their very simplicity, established a certain principle or type where the more complex structure of the handsome *Nelumbo* has failed.

How far the lotus was an object of worship seems doubtful, but from an early period we find it closely associated with Egyptian gods and kings. There seems to

be no trace of using the lotus at Hierakonpolis or in the Royal Tombs of Abydos. Apparently, the earliest dated example is in the group on the sides of the throne of Khafra in the IVth dynasty. To symbolise the union of all Egypt, the lotus plant of the South and the papyrus of the North were intertwined round the hieroglyph of union (Fig. 10). This group was expanded in the XIIth dynasty by adding the figures of the Upper and Lower Nile, Hapi in two aspects, as holding the respective plants (Fig. 11), and this group was continued as a standard decoration for royal thrones in the XVIIIth dynasty and onwards. The Nile-god in his two forms is likewise shown in the large group with altars covered with fish and plants found at Tanis, commonly called the fish offerers. Later figures show a single statue of Hapi with an altar before him, covered with lotus and wild ducks, as under Tehutmes III, and the well-known figure in the British Museum, dedicated by Sheshenq.



12. HAPI SEATED ON THE
BLUE LOTUS.
Bronze, Cairo.

13. HAPI SEATED ON THE
WHITE LOTUS, SURROUNDED
BY THE BLUE LOTUS.
Bronze, Cairo.

The inscriptions call him "Hapi, father of the gods, lord of sustenance, who maketh food to be, and covereth the two lands of Egypt with his products: who giveth life, banisheth want, and filleth the granaries to overflowing." In the hymn chanted at the great Nile festival, we find in the 12th verse: "When thou art risen in the city of the Prince—then is the rich man filled—the small man (the poor) disdaineth the lotus—all is solid and of good quality—all herbage is for his children. Doth he forget to give food, prosperity forsaketh the dwellings—the earth falleth into wasting sickness." This serves to indicate that while the lotus afforded ordinary food for the poor, they were very willing to have some of a better sort.

The Lotus in Religion.

The lotus stands alone as the plant to which was assigned by the ancient Egyptians the mystic habitation of the spirits of the blest, and as a symbol of life and immortality as well as of resurrection. Hence we find bronze figures of Horus on the lotus (Figs. 12, 13), and, among the paintings, one representing Horus rising from a lotus flower. This drawing is intended to indicate the Nû, that watery abyss from which the lotus sprang on the morning of creation, and whereon he is still supposed to bloom. According to Maspero, in the beginning Râ was the sun whose fires appeared to be lighted every morning in the East, and to be extinguished at evening in the West. But how could the sun have existed in the Nû (*i.e.*, the waters beneath the primordial ocean) without either drying up the waters or being extinguished by them? The identification of Râ with Horus cleared up this difficulty. The god needed only to have his right eye closed in order to prevent his fires from coming in contact with the water. He is said to have shut up his disc within a lotus bud, whose petals safely protected it. The flower had opened on the morning of the first day, and from it the god had sprung suddenly as a child wearing the solar disc upon his head.

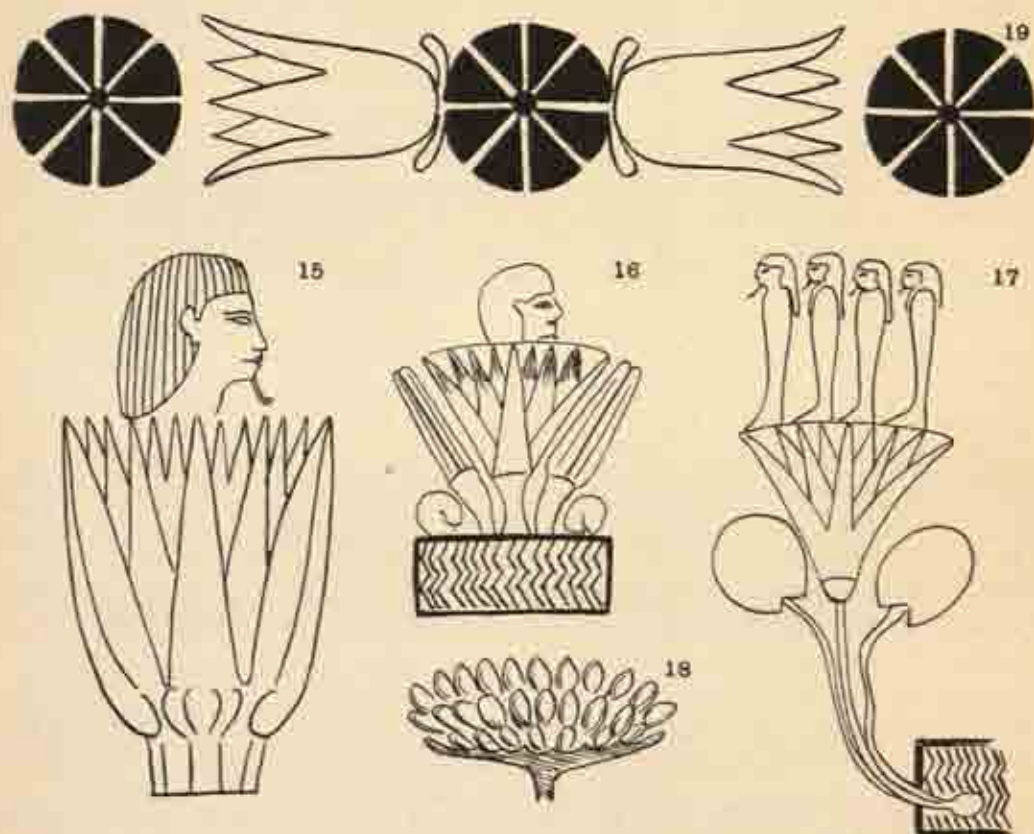
Another of the gods we find associated with the lotus, one of the Memphite triad, Nefer-Tem or Nefer-Atmu (Fig. 14) who appears with the lotus flower upon his head. As a god of the rising sun, we find the deceased after being transformed into a lotus, addressing him thus: "I am the pure lotus which springeth up from the divine splendour that belongeth to the nostrils of Râ," and again, "Hail, thou lotus, thou type of the god Nefer-Tem! I am one who knoweth you and I am one of you." The vignette of the first version is a lotus, and that of the second a lotus plant with a flower and buds growing out of a pool of water (Figs. 15, 16), and out of the flower springs a human head (*i.e.*, the head of the deceased).

The fruit of the lotus is an emblem of Isis or Abundance, and is so dedicated by Egypt (Foucart). The association of the lotus with the life-giving sun is but another example of the sacred character which was one of its attributes. The lotus as a symbol of life or resurrection, is shown by its constant association (Fig. 17) with the genii of Amenti (*i.e.*, the Lower World), the genii of the dead, and the children of Osiris and Horus. A representation on the wall of the temple of Dar el-Medeenah at Thebes shows the four genii of Amenti standing before Osiris on an open lotus flower (Wilkinson, ed. Birch, III, p. 468) and in the Papyrus of Hunefer (Fig. 17) the lotus is shown growing out of a pool at the feet of Osiris.



14. NEFER-TEM, WITH BLUE LOTUS ON THE HEAD.
BRONZE. CAIRO.

In those countries where Brahma and Buddha were worshipped, we find the deities often seated on a lotus flower, usually the *Nelumbo* (Fig. 18). In Japan it was the emblem of purity, inasmuch as it was never disfigured by the muddy waters in which it often grew. Vishnu is shown as holding in one of his four hands a lotus flower as a type of creative power; while Lakshmi, the consort of Vishnu, was termed "lotus born" from having arisen from the primordial ocean upon its blossom. Birdwood tells us that when the whole earth was covered with water Vishnu lay asleep, extended on the serpent Ananta ("the infinite") and while he

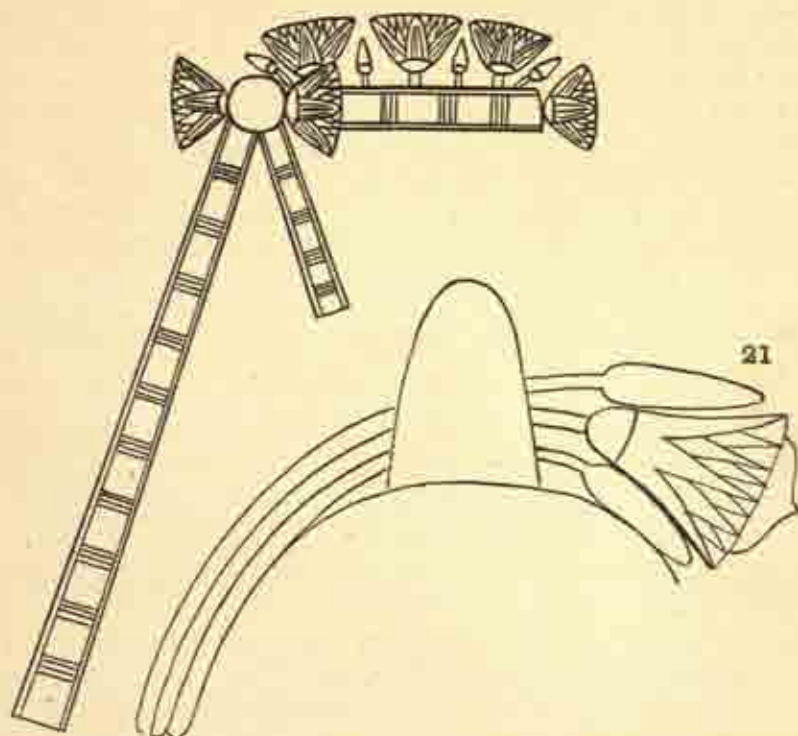


15. HEAD OF THE DECEASED IN HIS LOTUS TRANSFORMATION. Papyrus of Autoukh.
 16. HEAD OF THE DECEASED ON A LOTUS WITH BUDS AND LEAVES IN A POOL. Papyrus of Any.
 17. FOUR SONS OF HORUS ON A LOTUS WHICH RISES OUT OF A POOL AT THE FEET OF OSIRIS.
 Papyrus of Hunefu.
 18. INDIAN LOTUS OF BUDDHA. Red petals.
 19. HEADBAND OF PRINCESS NEFERT. Early IVth dynasty.

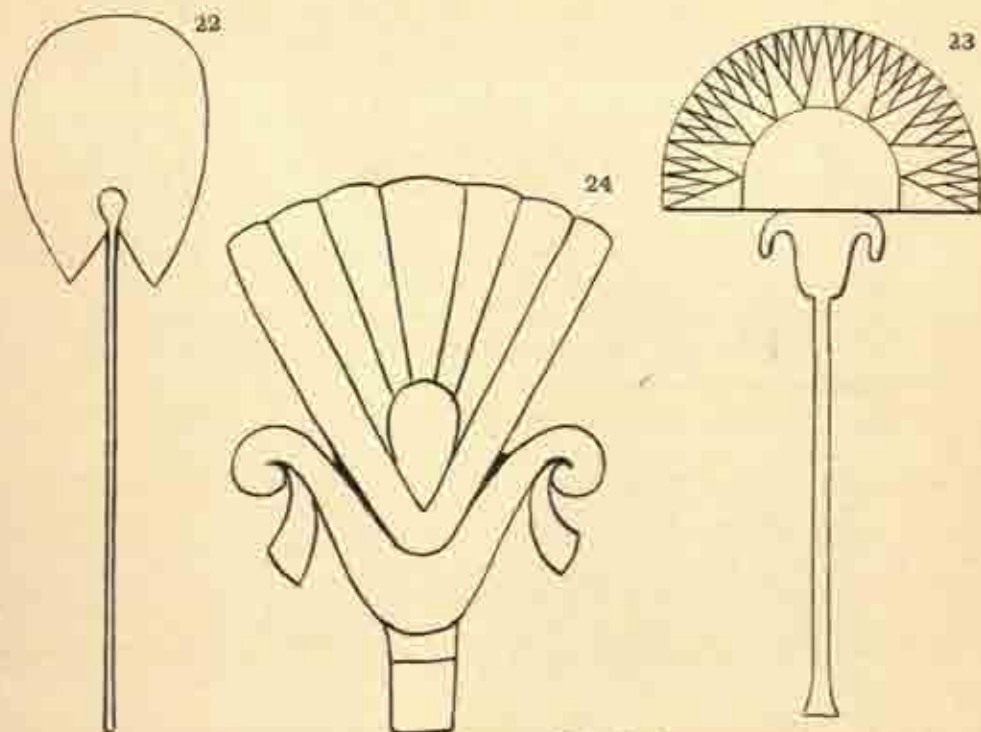
slept, a lotus sprang from his navel, and from its flower came Brahma. It seems, therefore, clear that, if I may coin a word, the odour of its beauty made itself felt before the natural forms of the plants began to be utilized in Art, just as the "odour of sanctity" serves for both the shadow and the substance.

The Lotus in Daily Life.

The Egyptians were very fond of flowers, and acknowledged Min as their God of Gardens, corresponding to the Greek Pan. The blue lotus was probably more common, the white one most cultivated in gardens; and it seems likely that the

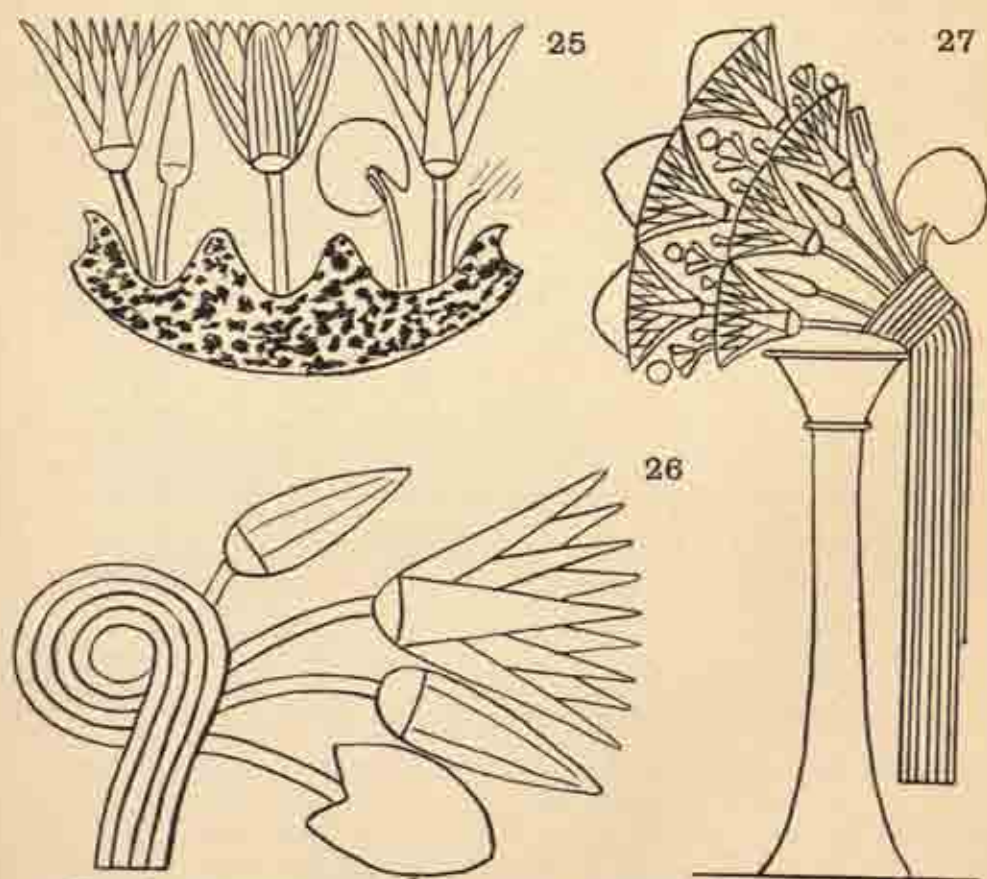


20. HEADBAND WITH LOTUS FLOWERS. XIIth dynasty. (Newberry: *El-Bersah.*)
 21. LOTUS AND BUDS PUT THROUGH THE CONE OF HAIR ON THE HEAD.
 XVIIIth dynasty. (Prisse.)



22. LOTUS LEAF FAN. XVIIIth dynasty. Deir el-Bahri.
 23. SUNSHADE OF LOTUS PATTERN. Deir el-Bahri.
 24. PALMETTO DEVELOPMENT OF LOTUS. XVIIIth dynasty. Tell Amarna.

greater frequency with which the blue one was depicted is owing to the fact of its being a day flower, while the white one only opening at night would be less accessible to the artists of that day. On the other hand, the more fragrant white or rose lily fresh from the gardens would be better adapted as an evening ornament for the ladies at their entertainments, as we see so often depicted, where the guests had each a lotus flower or rose bud placed in the hand, and this was retained throughout the feast; servants also brought necklaces of flowers. Composed chiefly of the lotus, a garland was also put round the head (Fig. 20), or a single lotus bud or full blown flower was so attached as to hang over the forehead (Fig. 21). Many of these made up into wreaths and other devices were placed in the room to



25. WHITE LOTUS BETWEEN BLUE LOTUSES, IN PORPHYREY BOWL WITH SPOUTED EDGE. Tomb offerings. XIIIth dynasty.

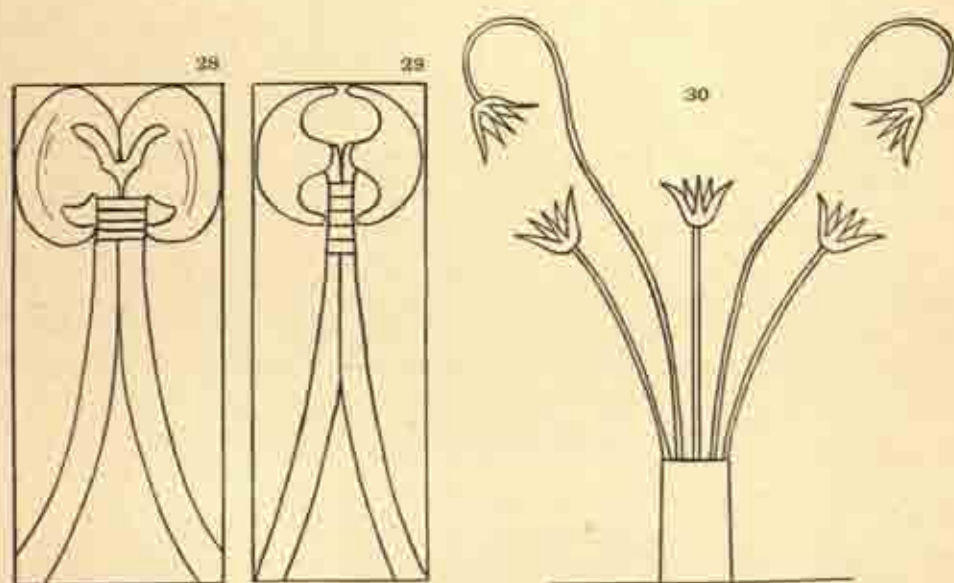
26. LOTUS GROUP ON OFFERINGS TO THE DEAD. XVIIIth dynasty. Deir el-Bahari.

27. LOTUS GROUP ON AN ALTAR OFFERED BY SETY I. Abydos.

be in readiness for use, and servants constantly brought fresh flowers from the garden to supply the guests as their bouquets faded.

So fond were the Egyptians of flowers, and so desirous to grace their gardens with profusion, that they even exacted contributions from nations which were tributary to them. They carried this fondness for them still further by painting the water lilies among the fancy devices on their walls, on their dresses, furniture, chairs, boats, fans (Fig. 22), sunshades (Fig. 23), or indeed anything they wished to ornament, and they even composed artificial flowers termed "Aegyptiae." Moreover, the lotus was constantly associated with all the Osirian funeral ceremonies: with religious

offerings for the dead (Figs. 25, 26), or placed alone on an altar before the gods (Fig. 27), as well as presented to the divinities protecting the dead: thus, it was the symbolical flower of death and resurrection, as I have already mentioned. This could, however, only apply to the *Nymphaea*, as the *Nelumbo* does not sink and rise again day by day. "The use of flowers in funeral decorations seems to have been very prominent in the XIXth-XXIst dynasties. The custom was to lay wreaths and semicircles of lotus flowers on the breast of the enwrapped corpse, until the sarcophagus was quite packed with these floral tributes. Flowers of the *Nymphaea Cerulea*, on stalks about a foot long, were fastened between the bands encircling the mummies of Rameses II and the priest Nibsoni, and scattered singly all over them. Breast wreaths, consisting mostly of petals and sepals of the same plant, sometimes also with petals of the *N. Lotus*, were found in the coffins of Rameses II, Amenhotep I, Ahmes (1580 B.C.), the priest Nibsoni, the princess Nesi-Khonsu, from the XXth and XXIst dynasties, found at Deir el-Bahri



28. TWO LOTUS OR PAFYRUS HEADS TIED. Tomb of Ka-aper. IVth dynasty.

29. SIMILAR. IVth dynasty. Saqqara.

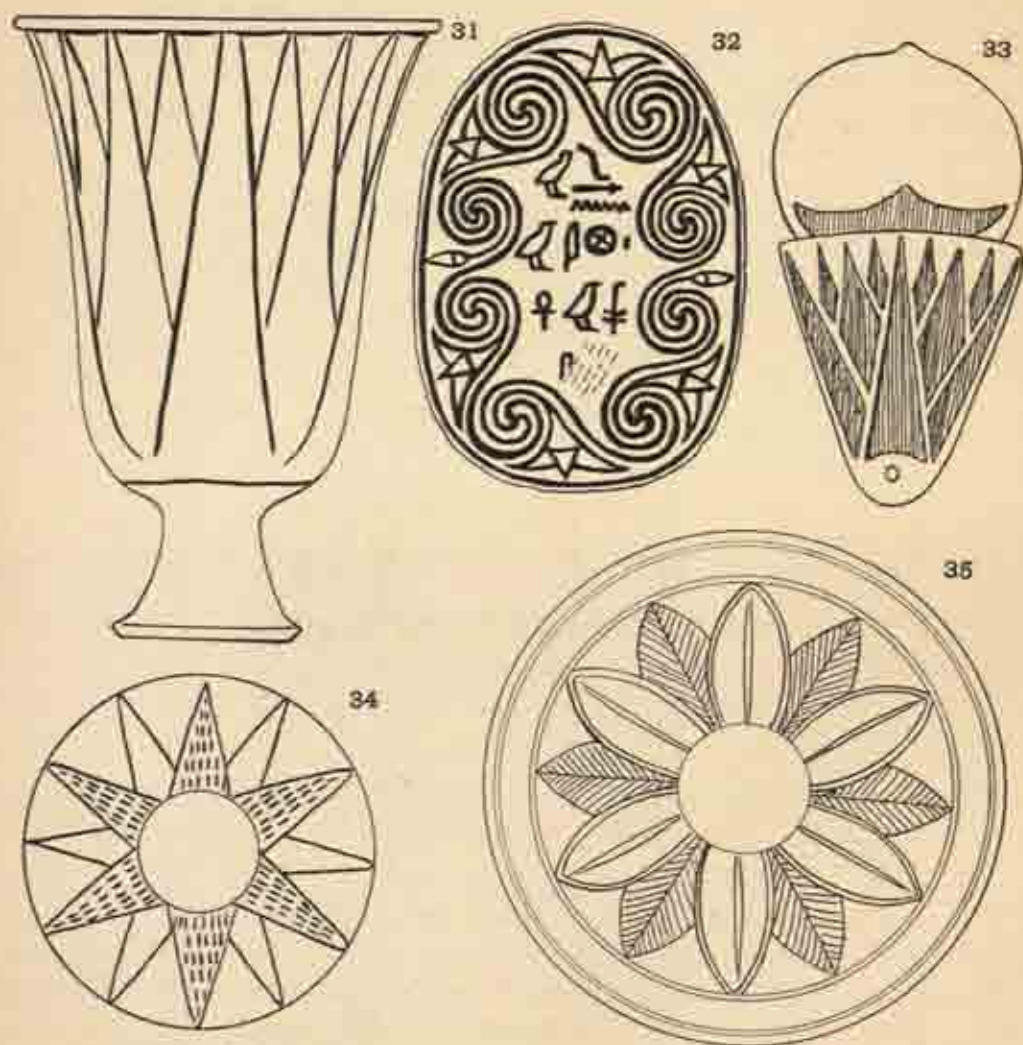
30. LOTUS GROUP ON GRANITE COLUMN. Rameses II. Memphis.

(Thebes) in 1881. These are probably the 'Egyptian wreaths' of Pliny and Plutarch, the 'lotus garlands' of Athenaeus. Most of these plant remains date from 1500 to 1200 B.C., but those of Rameses II were renewed about 1100 B.C., for in moving these sarcophagi at that time into their secret resting place in the Valley of the Tombs of the Kings, that of Rameses II was accidentally broken: a new coffin and new floral decorations being then provided."—*Muschler*.

As the ancient Egyptian religion died out, the *Nymphaeae* have to a large extent ceased to be cultivated in gardens, just as in India and Japan the *Nelumbo* has almost disappeared along with Buddhism, except where nurtured in old Temple gardens by the priests. These facts seem rather to indicate a definite relation to former religious rites in both cases.

It will be seen from the illustrations of the lotus proper (Figs. 1-7) and the *Nelumbo* (Fig. 8), that the former is the only one which fully explains its adaptation to decorative art. The inflorescence of the *Nelumbo* is never found in any

Egyptian work as a sacred emblem, and the seed vessel never appears. On the other hand, if you observe the arrangement of the petals and the drooping calyx leaves of the blue or white lily, and especially the buds of the same plants, their exact likeness to the earliest representations known is evident. The same applies to the rayed stigma, which both in its fresh and dried state gives us the figure of the Egyptian rosette (Princess Nefert) (Fig. 19). This is also shown in a section.



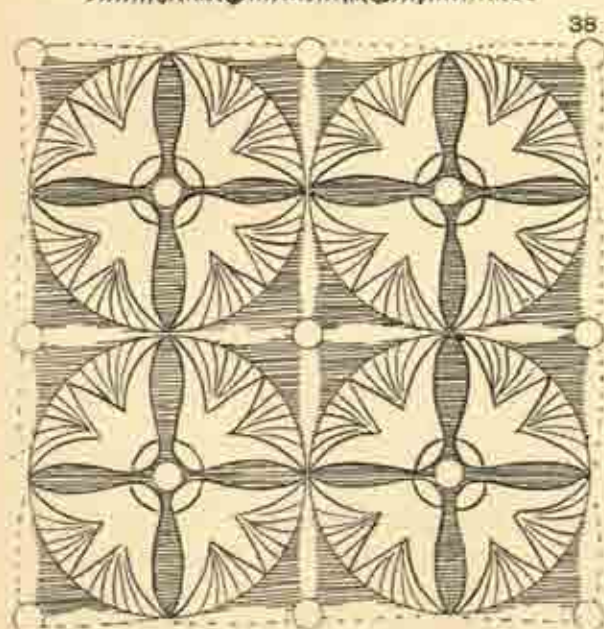
31. BLUE GLAZED LOTUS CUP. Nubé. University College. 5:8.
 32. SCARAB WITH SCROLLS AND LOTUS; OF THE MARSHAL OF THE CITY, AUSDOWNH. Turin. 5:2.
 33. WOODEN LID OF TOILET BOX. University College. 5:8.
 34. OUTSIDE OF BLUE GLAZED BOWL. XVIIIth dynasty. University College. 5:8.
 35. OUTSIDE OF STEATITE DISH. Roman. University College. 5:8.

The palmette (Fig. 23) is the ovary stigma combined with the lotus flower. This was used in Egypt some 2,800 years before it was seen in Assyria.

The inherent love of beautiful forms and of drawing them was, as Petrie says, a great force among the Egyptians, and made Egypt the birthplace of the world's best ornament.

The Lotus in Formal Ornament.

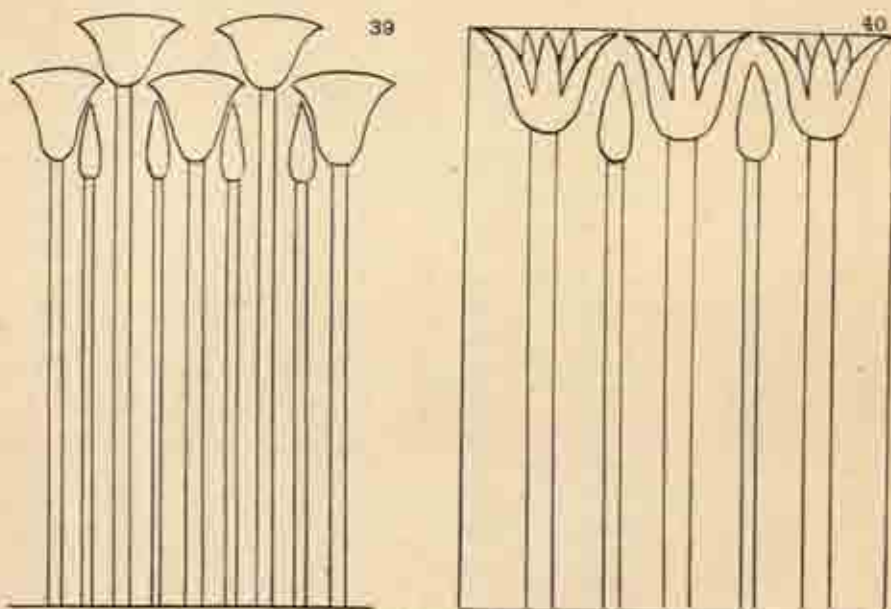
In the very earliest Egyptian work there is found a combination of the spiral and geometric forms, while we find before the IVth dynasty the lotus represented on pottery, and in the IVth dynasty the group of two tied lotus flowers, which continued till the XVIIIth dynasty (Figs. 28, 29). At this remote period of the world's records the traditions of religion and of art were so carefully handed down from one generation to another, that according to the best authorities, it is almost impossible to trace the gradations from the crudest to the more advanced forms.



36, 37. BORDERS OF LOTUS FLOWERS. } XVIIIth dynasty.
38. QUADRUPLE LOTUS GROUPTS. } PRIEST.

Plato ascribes this seeming changelessness in the Egyptians to the fact that the forms represented in the temples patterns of virtue, which were appropriated by the priests, and that no artist or painter was permitted to depart from the traditional and invent new ones, that these works of art discovered later were moulded in the form of 10,000 years before, so that the ancient sculptures and paintings underwent little, if any, change during these long ages. It was not until the time when conventionalism began to tell, that decadence took place as I shall try to show later.

We have not time to go into geometrical decoration, except so far as it is associated with the subject of this paper. The lotus has been held to explain the concentric rings which have been so beautifully drawn on the scarabs of the VIth dynasty, and even earlier than this. These spirals are said to represent (Fig. 32) the wanderings of the soul, but as Prof. Petrie asks, how could the soul go both ways at once? To my mind tendrils more probably gave rise to this form of ornament, and the endless spirals may fitly represent eternity, as we know that the ancient Egyptians believed in the immortality of the Soul. We find in this example of the XIIth dynasty the flower of the lotus introduced with excellent effect (Fig. 32), and later in a more geometrical combined form as in this (Figs. 36, 37). This combination was employed in a great variety of ways, but no examples have been found of circular decoration before the XVIIIth dynasty. Among them the most beautiful type was with contiguous circles, each containing four lotus flowers (Fig. 38). The rich effect of the insertion of these is very marked. The lotus



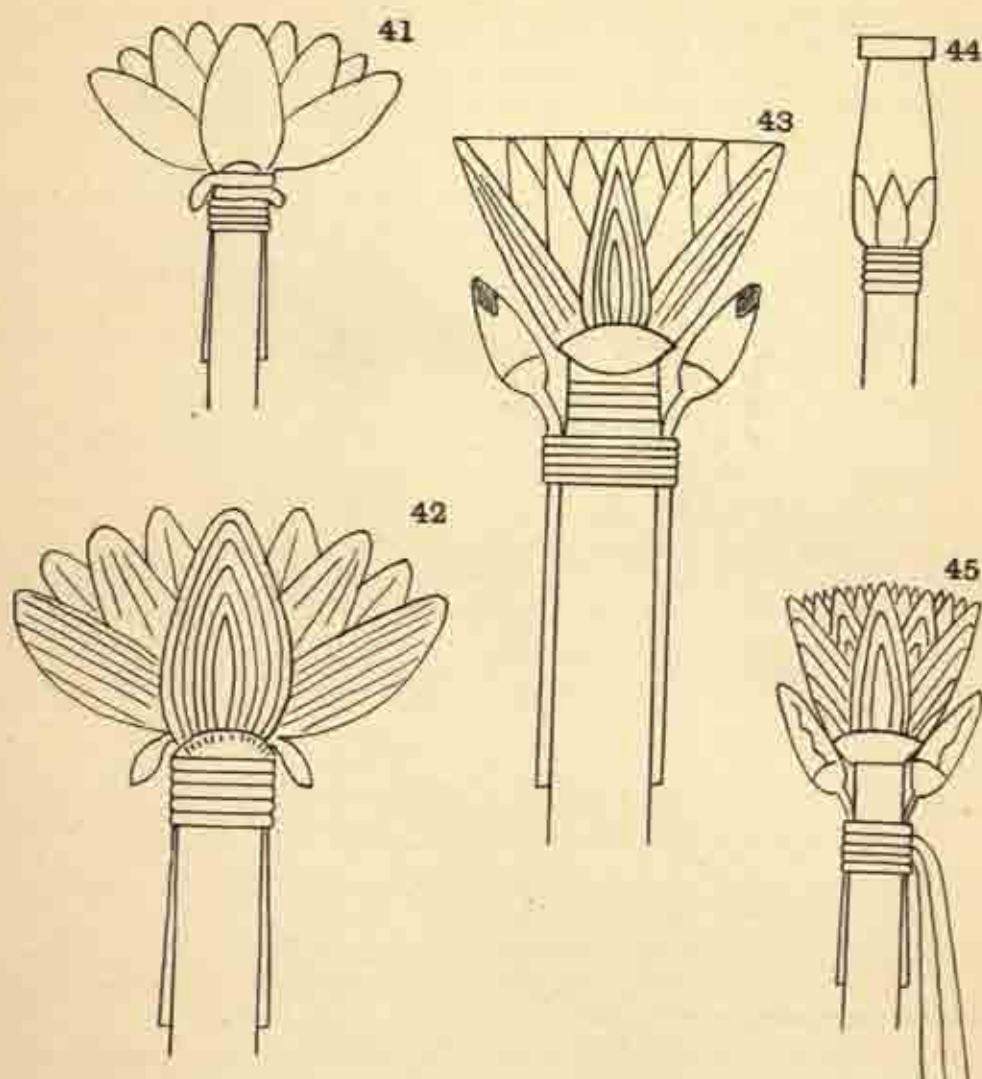
39. CLUMP OF PAPYRUS. Tomb of Debuhen. IVth dynasty. (L.D. ii, 35.)

40. MATTING OF LOTUS PATTERNS. Tomb of Rashedes. Vth dynasty. (L.D. ii, 64.)

occasionally is figured with six sepals, as Figs. 34, 35; but the circle alone is never found divided into six parts, as in Assyria and Syria, but always four or a multiple of that number. Probably they never used compasses at that period.

The earliest known delineation of lotus alone is on some prehistoric pottery found at Koptos. It is crude but quite correctly drawn and easily recognisable as the sepals of the blue lotus. On the head-band of the statue of Princess Nefert, which is no doubt familiar to you, of the IVth dynasty, we have the blue lotus shown, combined with the rosette derived from the lotus as I have already explained (Fig. 19). As the lotus flower was emblematic of eternal youth, we find it commonly on charms of all kinds—in fact it is seen on almost every article the Egyptians possessed. The cups were usually copied from the lotus flower, as Fig. 31. An ornamental box with lid in the British Museum from Thebes about 1050 B.C. gives a good idea of lotus wood carving, and the lotus lid of a box is shown here (Fig. 33). Some of the jewellery, headdresses and ornaments are beautiful examples of fine lotus work of that period. Later on, the artistic skill

assumed a more mechanical style and evinced less individuality. That devotion of the workman to the work he loved, and which he represented so faithfully, a marked feature of the Japanese also, decayed by degrees, as other nations implanted new ideas and new methods upon it. Some writers have thought the rosette pattern was derived from the daisy, as in some examples, especially on embroidery work, the yellow centre is shown. This is quite possible, though the lotus rosette is almost universal.



41, 42. WHITE LOTUS CAPITALS. VIIIth dynasty. Zowyet el-Meyetin.
43. LOTUS CAPITAL OF AMENHOTEP II. Thebes.
44, 45. LOTUS CAPITALS OF AMENHOTEP III. Thebes. Ali Prisse.

As a border pattern the lotus was not used before the XVIIIth dynasty, where we find it delineated in a somewhat formal manner (Figs 36, 37). But long before this, in the XIIth dynasty, the whole plant of the lotus was employed as a decoration both on architecture and sculpture, and later it was of a more free character, tending to become less natural and more conventional. And next we find it becoming in the Ptolemaic period more stiff still, being represented by parallel lines both for the lotus and papyrus. Then more complicated forms came in, leading to

the Greek anthemion (derived from the Egyptian), and other complicated evolutions. It is quite possible the Greek palmetto arose from the lotus also, as well as the fleur-de-lys. Many other flowers were thus introduced which do not concern us here.

Now we come to the adaptation of the lotus plant to architecture, and we are at once struck by the fact that Egypt affords by far the most ancient examples: it was in fact its birthplace. The lotus motive is characteristic of the finest examples



46. WHITE LOTUS CAPITAL WITH BLUE LOTUS FLOWERS ABOVE.
47. BLUE LOTUS CAPITAL. Both VII dynasty (?). Memphis.

of Egyptian architecture, and the variety is great. The conventional forms of the lotus which have been multiplied almost indefinitely in every direction, invariably convey the idea of the flower or the plant, and to this day in a large proportion of the best designs one can trace this influence.

The earliest delineation of the lotus flower is stated by Miss Murray to be on the tomb of the Sheikh el-Beled at Sakkarah (Fig. 28), but it looks to me more like papyrus. It often is carved on mastabas, as Fig. 29. There is a typical lotus

capital in wood of the VIth dynasty described by Prisse d'Avennes (Figs. 41, 42), which clearly is taken from the white lotus to which the buds and flower exactly correspond. Prof. Petrie gives a photograph of the white lotus capital of the Vth dynasty found at Memphis (Fig. 46). Of the same age is also the blue lotus capital (Fig. 47). At the Temple of Karnak we find some beautiful examples of the adaptation of the lotus flower to the capitals of some of the enormous granite columns of Tehutmes III (Fig. 48). The calyx is there without the flower, and is only one step removed from the Greek Ionic capital, and about 1400 B.C. this modification was actually used in Egypt, some 800 years before it appeared in Greece.

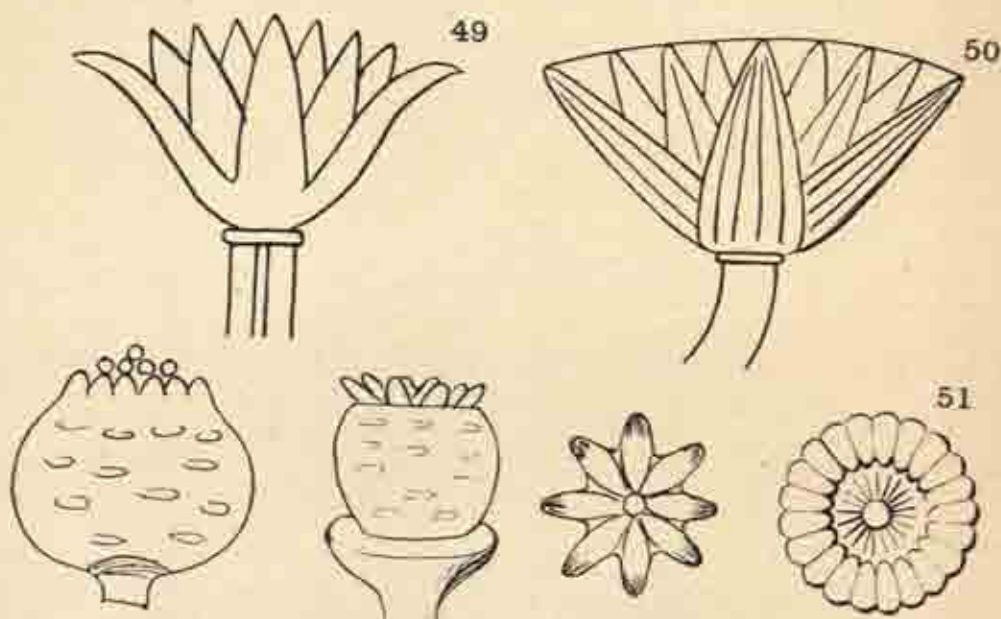


48. GRANITE PILLARS WITH PAPYRUS AND LOTUS
Tehutmes III. Karnak.

A good illustration of the closed bud and open flower designs are given by Prisse—clearly the lotus (Figs. 43, 44, 45). One mark of distinction between that and the papyrus column is that, in the latter, root leaves are usually depicted at the foot of the papyrus design, never on that of the lotus—showing how carefully Nature was followed at that early period. In some of the lotus columns, as at Philae, no two are quite alike. I need not multiply instances of this kind; they must be quite familiar to everyone, for some fine examples are to be seen in our British Museum; though to be fully appreciated they must be seen *in situ*, with the soft Egyptian moonlight or sunrise playing upon them and casting over them a glamour which is unique.

I have endeavoured, in taking the lotus of Egypt as my text, to confine my remarks to that more especially as the source of beautiful design, from which lovely flower forms were instilled into the minds of the Egyptians giving them their ideas of beauty thousands of years ago: the beginning from which most artistic forms have since been developed. The Egyptians long ago discovered that you cannot with impunity encroach upon the simple law of natural beauty, as exemplified in the curves of plant life, any more than you can infringe other natural laws without a corresponding injury. In fact, the more nearly we can approach the harmony which prevails in the complete work of Nature, the more perfect will the copy appear, and so much the more likely is it to become a "joy for ever."

W. D. SPANTON.



49. LOTUS CAPITAL. TOMB OF YMEY. VII. dynasty. (L. D. II. 52.)

50. LOTUS CAPITAL. JEWELLERY OF SENUSERT II.

51. LOTUS SEED VESSEL; OVARY, SIDE AND TOP VIEW.

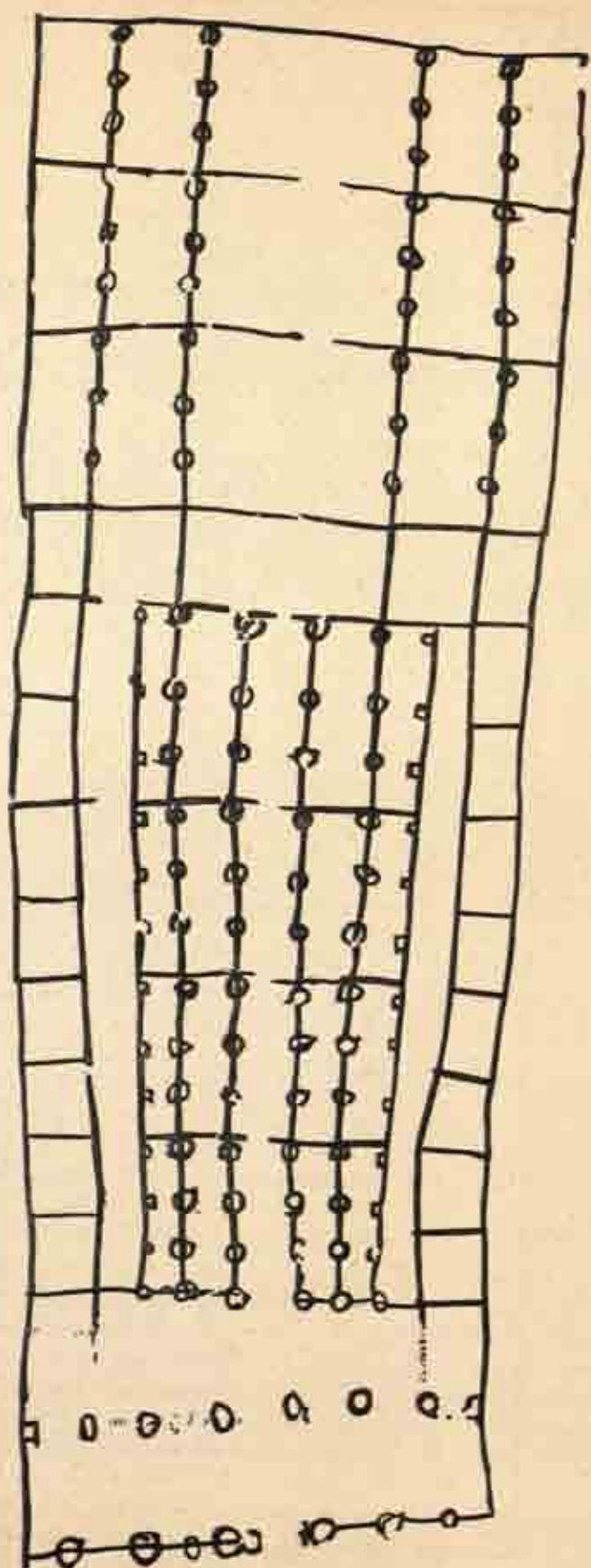
The last is from a bracelet of the tomb of Zer; it has twenty-one divisions, suggesting the sixteen divisions of *N. rubra* of India. No Egyptian lotus has more than eight divisions.

AN ARCHITECTURAL SKETCH AT SHEIKH SAID.

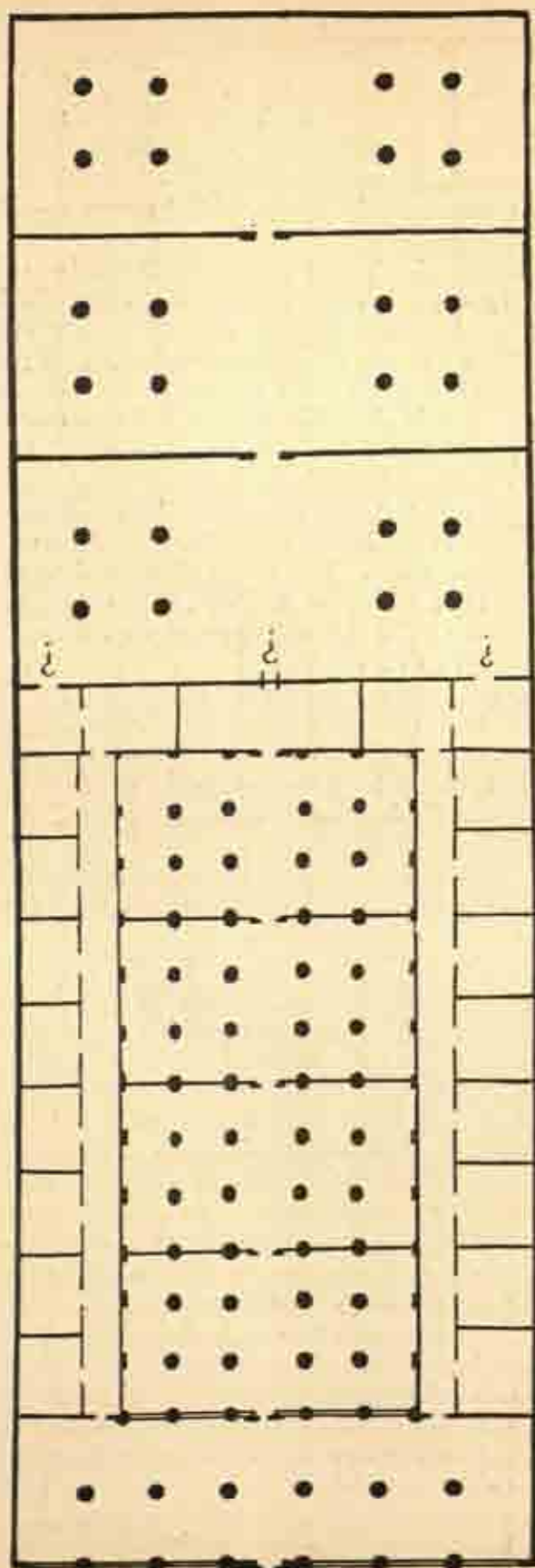
IN Prof. Petrie's *Tell el-Amarna*, p. 19, there is notice of a plan seen by Prof. Sayce on the walls of a quarry at Sheikh Said, and a rough reproduction of the same on Pl. XXXVII. The supposition, however, that the sketch had been destroyed by 1885 is incorrect, though that may well be the case by now. In 1903 I saw and traced it, and now reproduce it here. The original was drawn without much care in red ink, on the very rough surface of the north side of a pillar of rock, at the north end of a subterranean quarry just downstream from the tomb of the Sheikh Said (*Arch. Report, E.E.F.*, 1892-3, p. 10; *Tombs of Sheikh Said*, p. 6). I was not able to assign any date to the quarry or to the neighbouring tombs, though the latter gave the impression of being late in date, and to my knowledge there are burials of the Roman Period just above them. On the ceiling of the quarry, divisions (for piece-work?) have been marked, also in red ink. The plan was therefore probably made by the overseer or scribe of the quarrymen; for, from the simplicity of the design, and its impracticability in some details, it does not seem to be the work of an architect, but either the idly drawn picture of an imaginary building, or the memory of an actual temple or its ruins. A few of the lines are uncertain, as may be seen from the plate: and some faint and irregular lines have also been omitted as erroneous. In my tracing I have marked the entrance "river-end." It is therefore placed horizontally on the wall. It is sixty-two inches long and twenty-one inches high.

It is at once plain that the plan is not that of a projected quarry, but of a constructional building. The quarry is actually on the river bank, and its stone could therefore be transported easily to a distance. Still the most likely places for the use of the stone are Akhenaten's capital close by, if the quarry is as early as that; or Eshmunên (Hermopolis Magna) on the opposite bank if it is later. The town of Antinoë would probably derive its materials from the quarries of El-Bersheh.

The plan is evidently a rough one, and may have been meant by the overseer to give his men an idea of the arrangement of the rooms in the building for which the stone was destined, the doorways being for the most part omitted. The most puzzling feature is the series of party-walls, which are drawn consistently neither through the columns (screen-walls), nor midway between them, but just behind. It may be noticed in my *El-Amarna*, VI, Pl. XI, that the provision of a cornice to the dwarf-wall does throw the ground plan nearer the back than the centre of the columns. Screen walls are never used, I think, to divide up a large hall into bays; and in any case the similarly drawn line which divides this columnar hall or halls from the sanctuary (?), must represent a wall the full height of the building. But the result is that we have not only columns but also pilasters engaged in the party walls, and appearing on both sides of them. Though I have thus shown them in my interpretation of the plan, I do not believe they were so found in a real building, but that the arrangement is due to careless draughting. If these



ANCIENT SKETCH-PLAN OF BUILDING, Tell Amarna. 1:7.



PLAN RE-DRAWN IN MODERN STYLE

walls are not screen walls, they must be dividing walls of full height, bisecting intercolumniation (of double length?). The pilasters on the side walls which continue the transverse rows of columns are less needed there than on the party-walls where the engaged (?) columns are shown; for we must postulate architraves which connect the columns longitudinally, while transverse architraves could be dispensed with.

If the plan be taken seriously, its interpretation is as follows: The front of the building is formed by a portico, two columns deep, and six in frontage, the exterior row being linked up by a screen-wall (as at Denderah and Hermopolis), except in the middle, where one enters between heavy gate posts. Behind the portico the building consists of two parts, as the draughtsman's lines clearly show. The length of the fore part is divided into four equal rooms with four columns in each on either hand; or, if the dividing walls are only screens, it forms a colonnaded hall of forty-eight columns, arranged in twelve rows of four each. The front wall towards the portico is formed by six columns, of which the centre four are engaged in a screening wall for part of their height, while the two outside ones abut on, or are engaged in, the side walls also. The longitudinal architraves carried by the columns of the three halls (or hall) are indicated, but no transverse beams, though the presence of pilasters on the side walls imply their existence (cf. *El-Amarna*, IV, Pl. XXXVIII; V, Pls. VII, VIII).

At the back of these columned halls are three rooms; a middle one, which must be the shrine, and two side ones, regarding which it is open to speculation whether they are entered from the corridor or the shrine. As the shrine appears to be closed in the rear (though the lines do not quite meet), it is probable that the rear division of the temple is entered through the corridor and these side chambers.

In the rear half of the temple there is much the same arrangement as in the fore half, except that the whole breadth is taken up by the columnar halls, and that no pilasters are shown. The division into three halls raises just the same difficulty as in the main building; and the way in which the whole building is constructed, on a few lines which run across it from side to side and end to end, is opposed to any connection with actual architecture. It results here in an unequal intercolumniation (corrected in my interpreted plan). This rear part of the temple can hardly be roofed in the middle, the span being too great.

If we study the buildings in Akhetaten, the great temple (taking *El-Amarna*, I, Pls. XI, XII, as a guide) affords certain rough analogies, so that it is not impossible to think of our plan being a rough reproduction of one of the other temples which we know to have existed in the capital. The screen wall and the pilasters are peculiar and attractive features of several of the tombs, and the double colonnade in front marks a speciality of the temple. Other similarities are the series of side chapels or magazines, the halls or courts one behind the other and extending across the entire building, the temple divided clearly into two parts, and the absence of the usual deep shrine along the axis of the building. Unfortunately, we have no more means of checking the tomb-plans by the actual ruins than in the present case. The sketch here, though not impossibly the plan of a real building, and a sacred one, is very unlike the known Egyptian temple, late or early; but then the architecture of Akhetaten seems to have been as unorthodox as its doctrines.

Unfortunately, too, we have to regret our ignorance of the buildings that Antioch and Hermopolis contained. What we know of them from Denon's *Voyage*

dans la basse et la haute Égypte, Pl. 33, *Annales du Service*, VIII, p. 211, and elsewhere, does not encourage us to think that this sketch reflects the plan of a lost temple there. A greater value than I can claim for it now may yet attach itself to this sketch-plan, but at the least it has considerable human interest as showing in its originator a knowledge of architectural design and a measure of originality in conception.

N. DE GARIS DAVIES.

EGYPT AND MESOPOTAMIA.

THE whole question of the relations of early civilisation in Egypt has been re-opened by the publication of a new ivory-carving, which is the most important known for its historical purport. This is a knife handle, stated to have been found at Gebel el-Arak opposite Nag Hamadi, purchased by M. Bénédite for the Louvre Museum in 1914, and now published by the learned Curator in the *Monuments et Mémoires* of the Académie des Inscriptions (Tom. XXII, fasc. 1). As that publication is not much seen in England, the author has kindly permitted the most important parts to appear in ANCIENT EGYPT.

M. Bénédite first describes the decorated handles of flint knives already known. These are: (1) an ivory handle from near Edfu, now at Brooklyn, with nine rows of animals on one side and ten on the other, altogether about 300 figures; (2) the ivory handle from near Sohag (published in *Nagadah*, LXXVII), with six rows of animals on each side, now at Oxford; (3) the handle covered with gold foil bearing figures punched on it, found at Gebel Tarif, now in Cairo; (4) the small handle with two serpents and rosettes on one side and a lion, lioness, and hedgehog on the other, at University College, the serpents on which are here figured. Beside these, there are some flint knives which, by the marks on them, have evidently had similar handles. All these flint knives are to the same style: they have been ground on the faces, and then one face flaked over with the most regular parallel ripple flaking. This is the finest style of flint work, belonging to about S.D. 60. The butts of the knives are not of the usual broad curve, but they are chipped down to a narrow wedge form, to fit into the ivory handles. On the new knife it is clear that the ivory was too narrow to agree with the full width of the blade, and the edge has been trimmed back for nearly half the length, so as to be about 0.2 inch narrower at the junction with the handle. This shows that the flint work was completed regardless of the handle, and adjusted later: such an adaptation might be a sign that the flint was already old when fitted to the handle. On the other hand, all four knives are of exactly the same work and period, and it is unlikely that several such should be the only flints fitted with handles if the work was not all of one period. The new knife is 6.4 inches long, and the handle 3.8 inches, or 10.2 inches over all in length. The flint is 2.2 inches wide; the ivory handle 1.7 inch wide. The photographs of the handles here given are double the actual size. On all the three large ivory handles there is in the middle of one side an ovoid boss—or a socket for such on the Oxford handle; this boss is pierced with a hole, and is evidently for a cord to sling from the girdle.

On one side of the handle (Fig. 1) there are two rows of fighting men; five with the hair cut short, and well armed, are subduing four men with long hair, and unarmed. They are all unclothed, only wearing the girdle and sheath so well known on prehistoric statuettes. In this respect they are earlier than the men of the hunting palette, who all wear waist cloths made with pleats. The arms used by the crop-heads are three *kherps* (thus shown to be a primitive weapon), one pear-shaped mace-head, and one flint knife held by the middle.

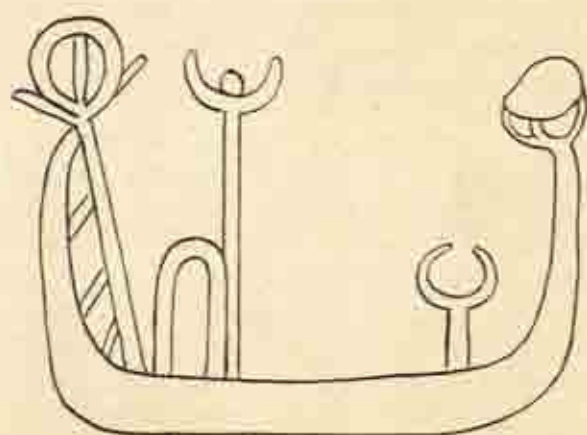
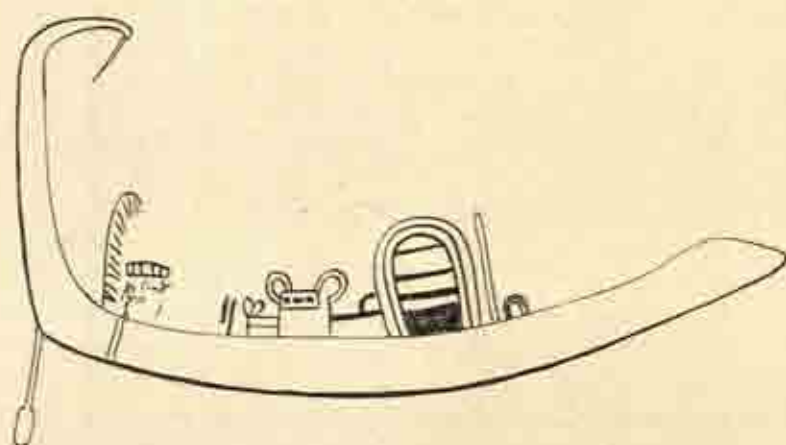
Below these are two ships of one kind and three of another kind, with four dead bodies between them, probably drowned. Two heads have disappeared in a

flake of the ivory; the remaining two are one with long hair, the other a crop-head. Another crop-head man holding a long rope, at the end of the upper boats, does



1. GEBEL EL-ARAK KNIFE HANDLE. 4:1.
COMBAT SCENES ON LAND AND WATER.

not belong to this scene, but connects with the hunting of the ibex on the other side. The upper two boats are interpreted by M. Bénédite as having at the left a mast with a crutch for the yard, and the yard and sail slanting down from that into the forepart of the boat (see Fig. 3); next a round topped cabin and an ensign mast by it; near the stern a low crutch for the steering oar; and the stern rising up with a clutch at the top of it holding an object like the ensign of Letopolis. The lower three ships are of the papyrus boat type usual on the Nile in historic times; the cabin and posts on each ship differ from the type at Hierakonpolis (S.D. 63) and later. At the prow of each ship is an antelope head, which M. Bénédite compares to the gazelle head on the prow of the sacred boat of Seker. The relation of this carving to other remains will be noticed further on.



2. BLACK SHIP. Hierakonpolis Tomb.

3. SHIP ON IVORY HANDLE OF KNIFE.

On the other side of the handle, Fig. 4, the design is more surprising. At the top is an heroic figure in a long robe, contrasting with the naked fighters of the previous side. He holds two enormous massive lions, which are not of the early Egyptian type. He has on the head either a cap with a deep rolled brim, or else a disc of curly hair as on the early statues of Mesopotamia. His beard is large and full, so that in every respect he differs from both of the types of fighters. Below this group are two collared hunting hounds, each with a forepaw raised over the central boss. The spirit and finish of these figures is magnificent: they are the

finest and most natural of all, unsurpassed by any later work. Below these in the shadow on the left is a dorcas gazelle, on the right a beautiful figure of an ibex.



4. GEBEU EL-ARAK KNIFE HANDLE. 211.
HUNTING SCENES.

Below the boss is a lioness springing on an ox, and behind these an ibex or moufflon, apparently lassoed by the hind leg. At the base is a smaller ox, hunted by a lynx or serval, held in leash by the same hunter who appears to have lassoed the moufflon above. The head is lost, but the figure is like that of the hunter before the boat who has lassoed the smaller ibex; he is of the crop-head type. Having now noted the details we can take a view of the whole.

We are here made aware of a new school of high Art. There are few ancient lands that could rival this work, perhaps none that could surpass the spirit of the dogs and the ibex. Yet this must belong to an age before the 1st dynasty, as the style of the flint knife is of the best period of the second prehistoric Age; and the fighters show an earlier style than the hunters of the slate palettes. This Art is not Egyptian; it has no sort of parallel in any of the purely prehistoric work of Egypt. The general style of the fighting groups reminds us of more than one monument of early Mesopotamia. Above all the figure of the hero with lions is a purely Mesopotamian or Elamite type, familiar down to Persian times. Thus the affinities are of the Tigris rather than of the Nile. Yet, we must not assign it to either source. There is no exact parallel, in all the sculptures or cylinder-seals, for these groups. Their inspiration is from the Elamite school, but they were not foreign work brought from there. They are the product of an Oriental people inspired by Elam and the Tigris, and entering Egypt with their own traditions.

The general parallelism with the principles of the slate palettes should be taken into account. The palette has animals facing on either side of its central paint-well; so the handle has dogs facing on either side of its central boss. The hunters lasso the wild animals on both the palettes and the handle. There is a system of symmetry in the upper parts of both, and procession in one direction below. The palettes seem to be a later product of the same school of Art as the ivory handle; inferior to it in most cases, but in the later palettes about equal to the handle, though in a rather different style. The handle, in short, is the climax of one cycle of Art, which decayed to the work of the coarser handles and earliest palettes, and the finest palettes are the climax of the next cycle.

The slate palettes are classified by M. Bénédite according to their styles of work, in three periods. The latest is that of Narmer, with which he places the bull fragment of the Louvre, and that with the gazelles and palm. Before these is a rather vague class of the fragment with seven towns, the Louvre fragment-Renan, and the dwarf palette of the British Museum. The earliest of the three classes is the animal palette of Hierakonpolis, and the great hunting palette. The characteristics of the earliest class are the round drilled eye; the plain squared form of the torso; the knees not projecting, but with kneecaps outlined; rudimentary hands, without opposing thumbs; the squared foot; the folds of skin on the shoulders of animals; the continuation of mane hair on the underside of the lion, the comb-shaped claws of lions.

Some further detail may perhaps be added to these classes. The palette of Narmer is certainly later in work than any of the others. The Louvre bull fragment is of a wiry style, which precedes the best work in later Art, and though near the Narmer palette, it is probably at least a generation earlier. The giraffes and palm palette may be nearer Narmer, as it is of a smooth delicate style; M. Bénédite goes so far as "to prognosticate that the missing pieces of the upper part, which may some day be found, bore the name of the Scorpion king."

The great mace-heads are next considered, one with the name lost (University College), one of Narmer (Oxford), one of the Scorpion king (Oxford). The style

of these accords with that of the latest group of palettes, and therefore the two other groups must be older than the Scorpion king.

It is proposed that the origin of the palette form is from the early shield, which appears in the hieroglyph of Aha. This suggestion is unfortunate, as the palettes have always a form tapering to a rounded end or point below, while the shield is always fully square below. The central pan in each palette, which is so important that the whole design centres around it, would be entirely without meaning in a shield; there is never any suggestion of a handle connected with it. When we look at the long series of slate palettes throughout the prehistoric Age, we see the purpose of them unmistakably, by the hollow worn in grinding, and the remains of ground malachite frequently found upon them; beside the general association with a brown flint pebble used to crush the paint, the pebble often having the green paint also upon it. The many instances of green paint around the eyes on prehistoric figures, on the early sculptures (Sekerhobau and others), and on the early mummy from Meydum, conclusively prove the purpose of the packets of malachite generally found in the graves, and the palette and pebble used to grind it. The *nas* green malachite paint appears in the early lists of tomb offerings.

Now these paint palettes are found of the triangular form, with decoration along the flat top, like the palette of Narmer; also of the rounded rhomboid form, like the animal palette of Hierakonpolis. There is no break between the plain slate palette, the palette with single incised figures, with reliefs, and the same form with more figures. Even the latest and greatest of all retains the grinding pan for the colour. That a slate palette should be so decorated and become an historical monument is not a whit more surprising than the early wooden snuff box becoming a vehicle for the finest miniature painting and the richest jewellery, and even becoming an elaborate musical instrument. Among the preparations for royal festivals probably the correct painting of the eyes would have a place; for that a palette was wanted; it would be consecrated by the ceremony to remain in the temple; it would naturally receive some record of the great occasion of the festival, and this would expand into the historical documents which we know. Exactly in the same way, the labels tied on to the offerings stated the event of the year in which they were prepared and the name of the principal official, thus becoming historical records like the palettes. These remarks seem needful, as various writers do not appear to have considered the unbroken line of descent of the palettes, and the strong proofs of their purpose. Many other suggestions have been made for which there is no evidence, comparative or otherwise.

The comparisons of this new knife handle with other monuments are stated by M. Bénédict. These are:—

(a) No indication of ground line; no separation of registers; the men and animals are all in space. This is not seen on any of the Hierakonpolis carvings.

(b) Water is not represented; boats are in space, as on the prehistoric pottery and the painted tomb of Hierakonpolis of S.D. 63.

(c) The men wear only the girdle and sheath, while the hunters on the palette of the earliest group have the pleated kilt. The feet are also more rudimentary than those of the hunters.

(d) The mane hair of the lions extends under the body, as on the earliest palettes. [This suggests a cold-country lion needing hair to protect the body from snowy ground.] The shoulder folds of the skin are as on the earliest palettes.

(e) The boats are of the earliest forms, as on the prehistoric pottery. The parallel flaking of the flint knife belongs to the best part of the second prehistoric

Age, and is far superior to anything found in the tombs of the 1st dynasty, or at Hierakonpolis.

Lastly, M. Bénédict dwells on the obviously Mesopotamian style of the hero and lions, and the groups of fighters. The close-cropped or shaven heads recall those on the sculptures of Susa and Tello. Other traces remain of these influences, as the human figure between two rampant beasts on the prehistoric paintings of Hierakonpolis, and the figures between two serpo-leopards on the ivory carving of the Royal Age, also at Hierakonpolis. The type had entered Egypt as far back as s.d. 63. The conclusion is drawn that there had been gradual infiltration of successive immigrations from the East into Egypt, at least since the highest period of the second prehistoric Age, and that these culminated in the final conquest by the dynastic peoples.

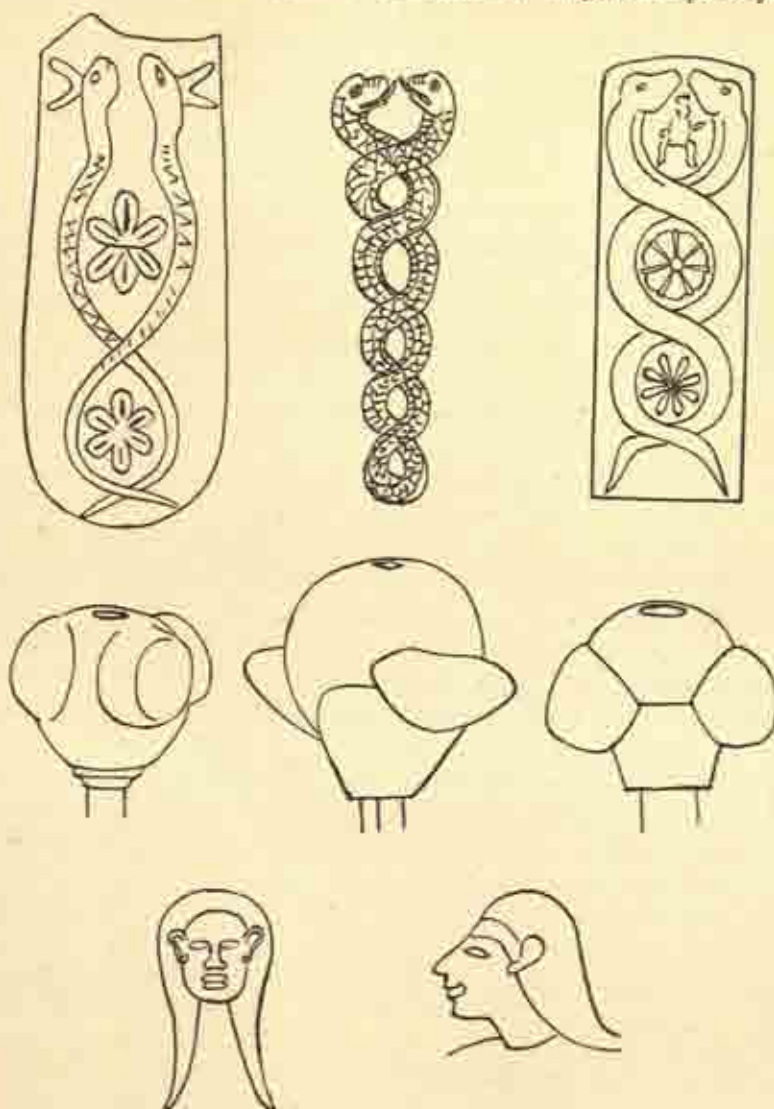
Having stated the fresh material and its discussion, there is some need of focussing all the details into their historical position; also taking account of some other facts bearing on the subject. Though what we know is very scanty and fragmentary, we can begin to see the continuity of the results; we need many more discoveries to establish a definite history, but a preliminary adjustment is the best way to show the meaning and importance of any fresh facts which might be overlooked. To know what to search for is the best way to promote discovery. The following outline must therefore be taken only as a means toward the history, and not as complete in any sense.

The broad question of the relative age of the civilisations of Egypt and Mesopotamia has been often canvassed. We now have a strong suggestion before us that advance was earlier on the Tigris than on the Nile. This encourages our considering a still more remote point. In the comparison of the flint-working ages in Europe and Egypt (*ANCIENT EGYPT*, 1915, pp. 59, 122), the results seemed to demonstrate the general uniformity of types between the East and West, at each of the successive ages. The characteristics of work in France and England appear likewise in Egypt, no matter what age is examined; this justifies further comparisons. The Solutrean types of France were shown to be closely reproduced in the so-called Fayum flints of Egypt. These were entirely absent from the series of prehistoric graves, while these graves contained the exact parallels to the Magadalenian flints which followed the Solutrean. Hence it appeared that the Fayum flints, found scattered on the desert, represented the earlier human work, before the series of prehistoric graves. Unhappily, they have been only the subject of native spoliation, and have never been collected on the ground by trained observers; hence we do not know how they occur, whether in definite settlements or if associated with pottery or other work.

Now in the low levels of the great mound of Susa, De Morgan found much of the first civilisation. The pottery is finely made and painted, as good or better than any pottery of prehistoric Egypt. With this pottery there were many worked flints (*Délégation en Perse, Mémoires*, XIII, p. 17), and these were clearly of the Solutrean types, like the Fayum flints of Egypt, especially the lance-shaped flints, rather thick, with finely notched edges. If the Solutrean civilisation extends at the same relative period from Britain to Egypt, it is only logical to suppose that the Persian examples are of the same general age. Thus, the fine pottery of Susa marks a civilisation a whole cycle earlier than the prehistoric graves of Egypt. The Orient started fine work at an earlier stage than the Mediterranean.

With this result before us there is good reason to expect that the East would maintain its lead over Egypt. The first continuous civilisation found in the

cemeteries of Egypt is mainly Algerian, S.D. 30 to 40. But as early as S.D. 38 a fresh influence came in, and dominated the land by S.D. 43; this, by its importations, was probably from the East. It has no products at all on the level of the carved knife-handle, nor leading to that, hence it was not from as far east as Mesopotamia or Susa. Its origin has been provisionally assigned to the Red Sea district, as it introduced hard-stone vases, and it had been in slight contact with Egypt throughout all the first civilisation, shown by rare occurrences of its peculiar pottery. Now we



ENTWINED SERPENTS.
 5. PREHISTORIC EGYPT, 6. GURU VASE, 7. INDIA.
 COMPOUND MACE-HEADS.
 8. EARLIEST SUSAN, 9, 10. PREHISTORIC EGYPT.
 11, 12. HEADS OF SYRIANS OF ART. . . . XIXth dynasty.

have learned from the new handle that, by the middle of this second civilisation, an entirely fresh art was coming into contact with Egypt. We must not conclude that the new people were actually living in Upper Egypt because this knife was found there. The knife may very possibly have been a spoil won in war from the

invaders. The scenes on it might not refer to Egypt at all. The papyrus boats might belong to the Delta, and be trading with Syria. We should not overlook the curious appearance of the conquered people, wearing heavy masses of hair coming down to a point on the shoulder. This type does not occur anywhere on the slate palettes; and the only parallel for it is a Central Syrian people, Figs. 11, 12, of a city named Artz . . . in the XIXth dynasty. If they were the same they must have been as far south as Palestine in the prehistoric Age, as the need of clothing was not felt. The Bedawy now fight naked, and so did the people of Southern Greece in Mykenaeen times. There is thus a considerable suggestion that this might be a record of a Syrian war, though the scene seems, perhaps, more likely to have been in Egypt.

The strong Mesopotamian suggestions of the designs have, as we noted before, no exact parallels in the East. They seem the rather to belong to a people of Elamite or Tigrian origin and ideas, who had progressed on their own lines. The presence of shipping as an important factor would be against their having come to Egypt across the Arabian desert. The probability seems that they had branched off to some settlement in the Persian Gulf (such as the Bahreyn Islands) or on the South Arabian coast, and from their second home had brought its style and ideas into Egypt.

That the crop-headed people were the ancestors of the dynastic Egyptians seems sufficiently probable. Narmer and his people were similarly cropped or shaven; and the three weapons here—the *kherp*, the mace, and the curved knife—were all used by the dynastic people.

We may now turn to further connections with the East. On the miniature knife in University College, the blade of which is wrought precisely like the other blades with ivory handles, there is on one side a group of two twined serpents and two rosettes (Fig. 5). The entwined serpents, much more elaborately treated, are on a vase of Gudea, in the Louvre (Fig. 6). In modern India the steles in honour of the *naga* serpents have the entwined serpents with rosettes between them (Fig. 7) as in the Egyptian form. To trace the sources of the Indian form would be difficult, and would take us but a small part of the way. The Egyptian example is probably between 8,000 and 9,000 years old, and the Indian we could not hope to trace for more than a third of this age at the utmost. It seems, however, clear that the idea is oriental rather than western, and this motive is therefore a further evidence of the oriental influence entering Egypt and introducing the carved ivory handles.

Another oriental connection is the knobbed stone mace-head from the earliest levels of Susa (Fig. 8). This is not unlike two compound mace-heads from early Egypt: Fig. 9 of hard white limestone, Fig. 10 of greenish-black steatite. These were bought in Upper Egypt, and almost certainly belong there; they are now in University College.

The Elamite cylinder-seals found by De Morgan were noted by him as resembling the style of cylinder-seals of the beginning of the 1st dynasty. But in these, as in the other oriental resemblances, though the style is obviously alike, there is no exact parallel. Again we are led to the view of a settlement from Susa or the Tigris developing its own detail on the way to Egypt.

The signs of a cold country in the art are difficult to localise. The hero holding the lions is more like a Tatar prince, such as Kadphises on the coins, than like the struggling naked Gilgamesh. He cannot have been idealised in a hot country. The lions having the thick matted hair of the mane extending underneath

the whole body, were not seen crouching in burning sands but in snowdrifts, like the lion slain in a pit in a time of snow in Palestine (2 Sam. xxiii, 20), or the tigers of Japanese artists, wading in snow. All this cannot have been accreted between Elam and Egypt; it belongs to the Elamite mountains, and it shows that the ideas of this people were formed in such regions, and so well developed and fixed in their minds that the transit to a fresh centre, and on to Egypt, did not modify their mythology.

We now turn to the ships figured here. Those of the lowest line on the handle have the curved body so marked in the papyrus boats, both in small Egyptian paintings and in the scenes of boat building. This is also the usual type of the boats in the painted tomb of Hierakonpolis, which is co-eval with the handle. It must be accepted here as the Nile boat, though its arrangement of cabin and fittings do not quite agree with the Hierakonpolis painting. Probably they are respectively the Delta and Upper Egyptian forms. About the other line of boats, with raised prow and stern, there is much more question. The Hierakonpolis tomb shows the fighting of two peoples, red and black, and two types of boat coloured red and black, doubtless as belonging to the different peoples. The red man is more numerous, he is victorious, and the boats are red excepting one. Hence the red man and red boat of the papyrus type (on the lower line on the handle) is doubtless the dominant race of Egypt at that time, the second prehistoric civilisation. The black man and the black boat, Fig. 2, are the invaders. The black boat of the painting is of the same type as the upper boats of the handle, Fig. 3. The high raised prow, and the round topped cabin, are opposite to the Egyptian type. We are thus led to take the black men of the Hierakonpolis tomb scene as being the conquering people of the knife handle. In accord with this the boat represented on the palette of Narmer has a raised prow and stern, similar to the boats on the knife handle. The same kind of boats, turned up high at both ends, were used by Mediterranean people in the war against Ramessu III; on a small scale they are familiar now in the same region.

The hunting scene shows that the domestication of animals was advanced. The collared hunting dog, with ears pricked forward and a full chest, seems like a well-established type, far removed from primitive wolf or jackal. The serval or lynx is a well fed and muscular animal, also far removed from the wild prowler, and evidently accustomed to the leash.

After this grand handle at the middle of the second prehistoric civilisation, there are the two other handles of a decadent style, with long rows of animals. Yet, as they also have finely wrought flint blades, they cannot be put far from the best handle. They probably mark the imitation in Egypt of the foreign work which we have been considering.

It is, however, this foreign work which is the parent of the slate palettes; they are distinctly the product of the dynastic people in contrast to the native style.

The conclusion of M. Bénédict that there had been a gradual infiltration of the dynastic people, during the second prehistoric Age before the dynastic conquest, is exactly in accord with the results of the anatomical measurements at Tarkhan. The length of the bones were grouped in five periods: A, the early 2nd civilisation, 43-69 S.D.; B, the late 2nd civilisation, 70-77 S.D.; C, the Tarkhan majority, 77-82 S.D.; D, the Tarkhan minority, believed to be dynastic in race; E, the VI-XIth dynasty people, showing to what type the Egyptian settled down.

On taking the various long bones, which were found to give clearer results than other parts, the leg bones together give in both male and female a continuous

reduction in the successive classes A, B, C, D, and then an expansion in the later period E back to the size of A. This shows that a continuous cause was acting to disturb the natural climatic type, but that after many centuries the climatic type reasserted itself, and reproduced the original dimension. In the arm bones the numbers of examples are so few—half a dozen or less—in some periods, that the complete progress of change is less clear. Taking the whole arm length the order is A, B, C, D, gradually decreasing, and then a recovery in later times of the dimension B. The humerus alone decreases in the male A, C, D, and returns to A; in the female A, B, D, returning to B. The radius in the male decreased A, C, D, and returns later to between A and C; in the female it decreased B, C, D, and returned to between C and D.

The actual changes in the total leg bones are a diminution of 7 per cent., and a return of $5\frac{1}{2}$ per cent. in the male; in the female a reduction of $2\frac{1}{2}$ per cent., and a return to the earlier dimensions. In the total arm bones a reduction of 11 per cent., and later a lengthening of half that amount. The changes are thus large and unmistakable, corresponding to several inches in the stature. This result was worked out, and fully stated in *Tarkhan II*, two years before the appearance of the conclusions drawn from the artistic work of the knife handles. The grounds for this historical result are therefore quite independent. It may be noted that it is in accord with the history of later Eastern invasions; the Semites were coming into Egypt under the XIIth dynasty, and increasingly till the Hyksos conquest, and the Arabs were coming in under the Romans until the Arab conquest.

To sum up then, the general presumptions as the case now stands are—

That the Elamite civilisation developed in the Solutrean Age, a whole cycle before the Egyptian development in the Magdalenian Age.

That a mountain people there had a fixed mythology and ideas with a developed art, far in advance of Egypt.

That these people developed further in some centre between Susa and Egypt, and thence moved on to Egypt. They were shaven or close-cropped, like the Sumerians; and they used high-prowed boats. Other eastern tokens arriving with them are the entwined serpents and rosettes, and the compound mace-heads.

These people may have fought with long-haired Syrians, and the handle be in commemoration of that conflict; possibly it was captured later and taken to Upper Egypt.

These crop-headed people are—or are akin to—the black men on the Hierakonpolis tomb.

They are the ancestors of the makers of the slate palettes, of Narmer and his people, and the founders of dynastic art.

They were invading Egypt early in the second prehistoric civilisation, and continued to come in greater numbers than they could be assimilated by the climatic influences; they were about three or four inches shorter than the Egyptians, and gradually shortened the stature of the population, which later almost regained its former size.

Gradually, step by step, we are seeing more of this rise of the earliest civilisation of the Mediterranean; our progress may be slow, but we see from the present discovery how much a single object may guide us. When we look back a quarter of a century to the time when we knew of nothing certain before Seneferu, and Mena was written down as a myth, we may well hope to understand much more in the future.

PERIODICALS.

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Institute of Archaeology.

[The previous half of this volume appeared just before the war, and was summarised in *ANCIENT EGYPT*, 1914, p. 171. After two years the second half appears with a sad notification, that, owing to prevailing conditions, a temporary suspension of the publication is unavoidable. This is not surprising considering the amount of war work undertaken by the editor, as well as by many contributors. It is not the less a sorry sight for a journal to be eclipsed, the more so as this number is better than usual. We may find everything eclipsed beyond bare sustenance before the expulsion of the Hyksos takes place.]

SAYCE, A. H.—*The Stela of Amen-renas.* This is a translation and discussion of the great stela of Meroë, dating from the early Roman Period and stating not only current events, but also historical references to the early Ethiopian kingdom. The translation given by Prof. Sayce is interlinear; as there are many omitted and doubtful words, and no clear sentences, it is difficult to grasp the general ideas of it. We shall therefore attempt a summary of it here for convenience of reference, always remembering that the first attempt at translating a long text in a script and language but little understood must be only tentative.

The strongly marked female line of the Ethiopian succession is known by the genealogy of a line of eight queens on the stela of Aspaluta; each of these bore a cartouche as mistress of Kush, and high-priestess of Napata, a system copied in the cartouches of the northern queens of the Ethiopians at Thebes, from Shepenapt I to Geratheni. This appears on the stela of Meroë which begins in the queen's name and goes on to "her deputy-heir, prince, deputy-heir of the queen, hereditary king of Roman Kush, hereditary king of the frontier of Egypt and Etbai." The same formula of titles is repeated for other kings. The first paragraph records the capture of 12 men and 115 women by Imla, son of Aginirherhe, who was the king under Queen Amenrenas. The second relates the capture of 100 men and 107 women serfs of the god Hapi of Biggeh at the First Cataract, "together with their god Yika, god of the land of Shesh" by Erhetok (?) for his mother, Queen Arbel. The third raid was of 55 (?) men and 253 (?) women belonging to Yika of Mam, a region around Derr, captured by Ipiali descendant of Yesbe. "Amenhetep, in old time of Meroë . . . lord of Korti, director of the singers for the priests (?), lord of . . . who were in neighbouring territories, lord of the Medi of Uke (?), who was in the land of Thabre (north of Khartum), a Kushite from . . . , lord of the princes in the adjoining land of Uebar, from among the hereditary princes of the race (?) of Irhi, the princess of old, the mistress of the women and men in war (?) captured, viceroy of the ruler in the land of Aton (Sesibi) the Egyptian of the West, a Meroëite godborn Teie; Irhi was . . . of women and men as follows, 3,400." Then

follows a statement of spoil, 257 people. The syntax connecting the spoil with the previous account is very indistinct; but at least, if this rendering be accepted, there is here a reference to Amenhetep III in his position as ruler of Ethiopia, and a statement of his descent from a Princess Irhi, and apparently the tribe of Irhi is stated at 3,400 people. There would be nothing surprising in an Ethiopian queen being an ancestress of the black Aohmes Nefertari, and hence of Amenhetep III; such a connection would be cherished in Ethiopia.

Then follows a statement of the family of King Aginirherhe who set up the stele: "Aginirherhe, the royal, the deputy (of the queen), the lord of deputies, chief musician of Amen of Thebes, prophet of those (ancestors) of Amen's land who were chief musicians, deputies, lords, lovers(?) of his house(?), who have been kings of Napata since Mahartosen and (?) Amenarres." Here the descent of the kings of Napata is said to be from the earlier kings Mahartosen and Amenarres. This strongly reminds us of Usertesen and Amenemhat as founders of Ethiopian civilisation.  is used for a valiant man in the XIXth dynasty; what if this were a loan word brought from the south by the XVIIIth dynasty, and used as the Ethiopian for *user*? Following this is the parentage of Aginirherhe from a king of the same titles "from among the princes of the race of Irhi the princess of old." Much else can hardly be reduced to connected sense, but it ends with a dedication of 252 (serfs?) to Osiris-Hapi of Biggeh.

The second great stela of Meroë is much defaced, but on it is a mention again of the ancestor-princess Irhi; also of Queen Teie. The general result is that the record was kept of Amenhetep III and Queen Thyi as great rulers in Ethiopia; that the XVII-XVIIIth dynasties had one of the Ethiopian queens as an ancestress; and perhaps the foundation of the kingdom was taken back to the great kings of the XIIth dynasty who conquered and governed the Sudan.

PEET, T. E.—*A Mortuary Contract of the XIth Egyptian dynasty*. A stele in the British Museum of a noble, Antef, son of Mayt, gives a briefer form of a contract for offerings, which is so well known in the long inscription of Hepzefa at Asyut. Mr. Peet states that the source of this stele seems to be unknown; in the official *Guide* (p. 38) it is stated to be from Qurneh. The stele is of a usual type, the noble standing, and his steward on a smaller scale below. The titles are the usual ones of a great noble, and to them are added a list of personal virtues, as often was done in the Middle Kingdom. "I was one firm of foot, persevering of plan, wise, clever, . . . of heart, one who fed the elders, who buried the aged, who gave to the children with his own fingers." In the article there is a proposal for a conjectural emendation to avoid the phrase "feeding the *ura*"; but it seems evident that the *ura* are those who are great in years, not in wealth. Another notable phrase is: "both of what my own might gained and of what Nebhepetra (Mentuhetep) gained for me." This reflects the age of civil war in Egypt, the noble fighting on his own account, and also fighting under the king and being rewarded.

A list of offerings follows "which the king gives to Osiris," that is food-rents of the king allocated to the service of the gods and of the dead. These were in some cases not merely a pious expression, as "thousands of oxen," etc., but were specific endowments, such as "two *shens* cakes and two jugs of milk that are before the mouth of Ra himself."

Two contracts for the performance of funereal rites are then recorded,—contracts which were probably as little regarded as the provision for perpetual

masses for the founder's soul in the chapel of Henry VII, entirely abolished by his son. The first contract is with one Hekhtiu for libations and offering of *shens* bread and *in* cakes, to the statue of Antef every day. The other was made with a priest Antef to perform service in the tomb, to read the liturgy at every monthly and half-monthly festival "in order that my name may be good and that my memory may exist." The payment for these services were twenty parcels of clothes to the daily priest, and ten parcels to the monthly priest, a man and woman servant to each, and the right of irrigation across the noble's fields. The use of the serfs would seem to have been the greater part of the value. The clothing seems to have been a single gift, while the serfs would apparently be a perpetual charge on the population of the noble's estate.

SELIGMAN, C. G.—*A Prehistoric Site in Northern Kordofan*. The site described here is about 170 miles south-west of Khartum. Here stand four large artificial mounds, nine to twelve feet high; they have evidently been much denuded. On trenching through these mounds three strata of human remains were prominent. At the bottom were bones of cattle, sheep, dog, and perhaps goat. In the mounds were much pottery, with stone, ivory and bone objects. The pottery bears a string-mat pattern, showing the basis on which the clay was beaten out. Such a mat pattern is usual now in Kordofan, but does not occur in Nubia. Most of the incised patterns seem to be due to tooling with a comb which had about fifteen teeth. Most of the forms of pottery now used in Kordofan are the same as those in the mounds. Stone weapons are rare, only an arrowhead, an adze, and a fragment were found. Ivory was not common, only a few worked pieces and large beads. Bone lance heads are described, but they look as if they might rather be netting bones, which are so common in Egypt, for making fishing nets. The commonest objects are ostrich egg-shell beads. One bead of carnelian is like those of the XVIIIth dynasty.

From the mineralised state of the bones, and the decomposition of granite fragments, it appears that the mounds are of considerable age. The dust of which they are composed is identical with undisturbed country soil, and is not due to the washing down of brickwork. The accumulation of such a depth during human occupation would imply a long period. The conclusion that they are of Ptolemaic times, or earlier, seems quite probable; and it would be likely that they began with the extension of the Ethiopian kingdom about the XXVth dynasty.

WOOLLEY, C. LEONARD.—*A North Syrian Cemetery of the Persian Period*. The cemetery here described lies close to the Baghdad railway, to the north of Aleppo. It has been plundered out by the natives, and happily Mr. Woolley has gleaned some account of it. The classes of objects found are of considerable interest for the trade of the Persian Period, and as partly dating many things found in Egypt. So many are these connections that we give a dozen outlines here selected from the paper in order to help to date Egyptian antiquities. Most unfortunately the plate of small objects, which would be of the greatest interest, is missing from the publication, owing to Mr. Woolley's service abroad.

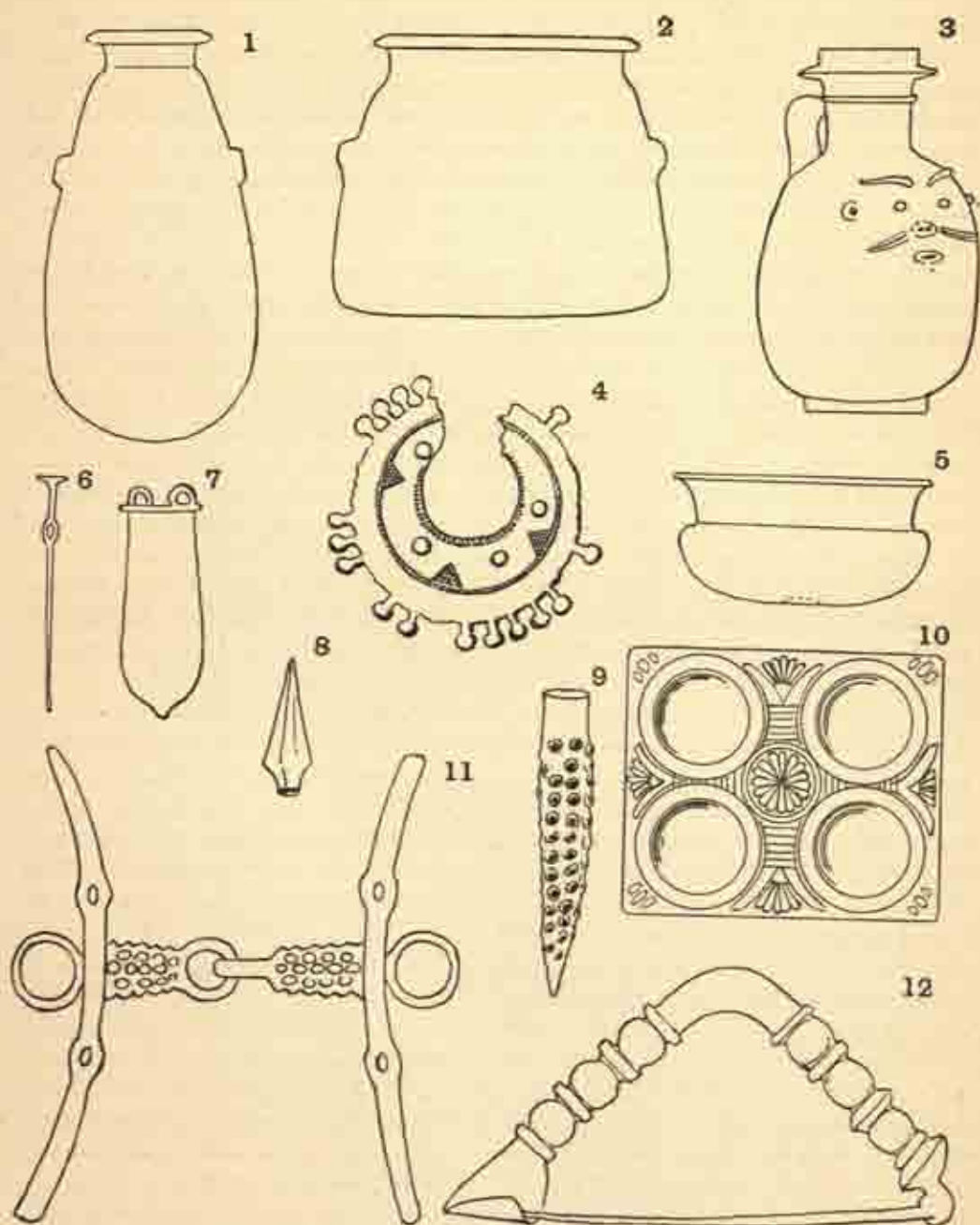
The cemetery is close to one of late Hittite Period, of which an account was quoted in *ANCIENT EGYPT*, 1914, pp. 173-4. As regards the date of it, the presence of Attic vases and coins of the fifth century B.C. (early rather than late) give one fixed point. Earlier than that it is noted that there are none of the things which were usual in Carchemish or its cemetery, which is believed to have come to

an end in 605 B.C. Nor, on the other hand, is there anything of the Hellenistic Age, 300 B.C. and onward. One closely dated object must have been old at the time of burial; this is the scarab of Menkara the vassal of Shabaka, 715-707 B.C. This scarab is ascribed by Mr. Woolley to re-issues of early kings by "Tirhaka and his successors." But we know that Menkara was a king reigning about this time, as there is a late papyrus of his son in the Parma Museum, and a cylinder with the names of Shabaka and Menkara shows his position. Another early suggestion is given by the resemblance of the graves and contents to those found at Gezer which are attributed to the ninth or eighth century B.C. It seems that we cannot get closer than dating the cemetery between 650 and 450 B.C. The village of Deve Hüyük close by evidently continued into the Roman Age, by the inscribed stones reported; one of these appears, by the illustration, to bear the date 449, probably of the Seleucidan era, that is A.D. 138.

Referring now to the figures given here (which bear no relation to each other in scale), Fig. 1 is a well known form, like the large alabastra which were smashed and buried in the palace of Apries, probably at 525 B.C.; about 600-550 B.C. would be a likely date. Fig. 2, of alabaster, is a clumsy form descended from the XIXth dynasty, but the futile handles on it show that it belongs to the XXVIth dynasty. Fig. 3 is stated to be an imitation of Egyptian pottery; but exactly the same are known in Egypt, and it was doubtless imported to Syria like the alabaster vases. Fig. 4 is a silver earring with radiating balls, a type which is stated to extend to Ephesos. This also occurs in Egypt. The pattern of a triangular pile of minute globules is frequent in the XXVIth dynasty. Fig. 5 is one of the various forms of bronze bowls, which are fairly common; this is more like a usual Egyptian type, others in Syria are flatter, or have godroons like the silver vases from Mendes, or are plain hemispherical or open bowls. The cylinder pot of bronze is also found, which is probably a measure as in Egypt. Fig. 6, the pierced toggle pin, is stated to be widely spread in Syria and Mesopotamia. It is also found in Egypt in the XVIIIth dynasty, doubtless imported from Asia. Fig. 7 is the common form of situla in Egypt; it was found with a godrooned bowl. The Egyptian situlae are usually of about the XXIIIrd-XXVth dynasties. Fig. 8 is the three-bladed Scythian arrowhead which appears to be unknown in Egypt until the great Scythian invasion of Syria in 624 B.C. Fig. 9 is like the graters of the XVIIIth dynasty. It is suggested that it might otherwise have been a strainer attached to a syphon tube. Similar cones are also of Roman Age in the Sudan. Fig. 10 is an alabaster slab with shallow saucers in it, divided by a lotus pattern of Assyrian style. Such modified lotus is often seen in Egypt, and usually supposed to be of the Persian Age. Fig. 11 is a horse bit with curved side bars like those from Georgia, and figured on the Assyrian sculptures. The Georgian bits have not the spiked cross-bit, nor have the Egyptian; but this type is stated to be identical with some Scythian bits. Fig. 12 is one of a class of similar fibulae common in this Syrian cemetery, and said to be like others of Cyprus, Asia Minor and South Russia, 1200-600 B.C. This was found with the Menkara scarab of about 700 B.C. It is almost like a fibula found at Yehudiyeh (*Hyksos and Israelite Cities*, XXA), and there supposed to be of the XXVIth dynasty.

Next may be noted various other objects not figured here. Mirrors were usual, apparently of cast bronze, with a long tang; they are almost circular, but slightly drawn down to the handle, a form of about 700 B.C., the entirely circular form belonging to 500 B.C. and onward. This, therefore, points to the earlier date for the cemetery. Shallow pans, much like mirrors in outline but much hollowed

and wider in the handle, are found in this cemetery; such were made in Egypt from the XVIIIth to the XXVth dynasty. Iron swords three feet long are quite un-Egyptian, but are probably like the sword of the Persian Age found in the palace of Apries (*Memphis III*, xxxviii). Bracelets and anklets of bronze were



OBJECTS FROM A NORTH SYRIAN CEMETERY, 650-450 B.C.

common, with slightly cut dogs' heads or snake heads on the ends. Such are stated to be also Scythian. Thick bracelets and anklets in Egypt have similar heads, and also fish, cut on the ends; their age has been hitherto unknown. There were many glazed amulets of Egyptian gods of the usual late style; but the glazed

pottery seems to be entirely Syrian. Many of the variegated glass jug vases were found, of the late style like the so-called Cumean glass, of about 800-600 B.C. It was mainly because of the demand for these by dealers, that the plundering of the cemetery took place. Of purely Asiatic style may be noted the chapes of swords, with what is stated to be the head of a ram, but which looks more like a degradation of two elephants' heads; also many conical seals with late Mesopotamian designs, as a figure sacrificing or praying to the Moon-god.

Altogether, this cemetery shows the great mixture that was going on through the eastern world about 600 B.C. The Scythian movements driving much northern work down; the Egyptian trade and supremacy in manufactures leading alabaster, bronze and pottery northward to the top of Syria; the Persian domination of Asia Minor and Egypt bringing fashions in from the East; the pervasive Greek mercenary and trader insinuating his style from the West. It will be most desirable to publish all these things in groups on an adequate scale, and this discovery lifts a corner of the veil from all the mass of archaeology which awaits us when civilised powers shall hold Syria and the East.

Bulletin de l'Institut Égyptien. 1915.

Deux Clepsydras Antiques. DARESSY, G. (*Bull. Inst. Egypt.* V, ix, 1915).

In this Paper a full account is given of two clepsydra vessels in the Cairo Museum, which were to be filled with water, and the lapse of time read off on graduations inside as the fluid dropped out. There were various fancy devices in the classical times for indicating the level by floats; whether such were used in these instances is immaterial, as the graduations inside show decisively how they were to be read.

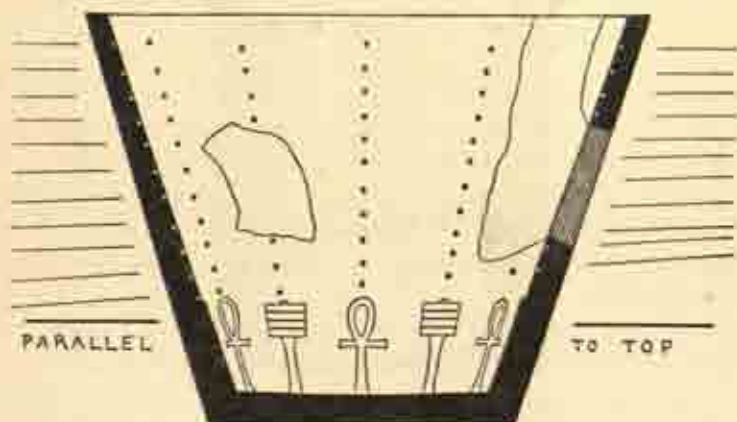
Both vessels alike have twelve lines down the inside from top to bottom; and, as in one case, they have the names of the twelve months placed over them respectively, it is clear that a different upright line was read each month. Further, there are twelve lines around the side in one, presumably corresponding to twelve hours, and eleven lines with the top edge, making twelve, in the other; and these lines, while parallel at the top, become increasingly tilted going toward the bottom. Each vessel has a dropping hole near the bottom. Such are the main features in common to both clepsydras.

The earlier vessel is the more precise and interesting. In the section here copied from M. Daressy, the mean line through each row of points has been drawn outside of the vessel to demonstrate the increasing tilt on descending in the vessel. The bowl itself is of alabaster, 14·6 inches high outside, 12·6 inside. Top diameter 18·9 and 17·4; base diameter 10·2 out, 8·3 inside. It has been broken up, anciently, but most of the pieces have been recovered in the clearance of the ruins of Karnak by M. Legrain. The vessel bears figures of gods and inscriptions, naming Amenhetep III; this dates the bowl to 1380 B.C., or within thirty years before that. The vertical lines and hour lines around are marked by small drill holes. The signs at the bottom shown here mean life and stability, they are often used decoratively, and have no connection with the measurement.

How are we to understand this variation in the level along with the month of reading? M. Daressy concludes that the variation was to allow of the intervals corresponding to the longer or shorter hours of the night. But on comparing the lengths with the actual length of the night, it is shown that the variation of the

long and short nights is nearly double the actual variation of the scales of summer and winter. We can go further by the marking of the names of the separate months. The first month was Thoth, and the largest scale here is of the month Hathor, beginning 17th September, and the shortest scale is of Pachons, which began 14th March in 1380 B.C. Now this is contrary to the theory, as the maximum and minimum are not at the solstices, as they should be. Evidently we must look elsewhere for an explanation.

A matter often overlooked—even in canal discharges—is the large variation in the viscosity of water with temperature. Much more will flow through a pipe as the temperature is raised; at boiling point the flow is six times the amount that it is when near freezing. If this difference in the greater length of the summer scale were to compensate for the quicker flow of the water, it would imply in the Karnak clepsydra a variation of 15:17 in the rate. At about 70° Fahr., the mean temperature of Egypt, this would imply a change of temperature of about 9° Fahr. between summer and winter. As these clepsydra were probably placed in the inner chambers of very massively built temples, with walls many feet thick, and close to the ground, it is likely that the change with the seasons might not exceed this.



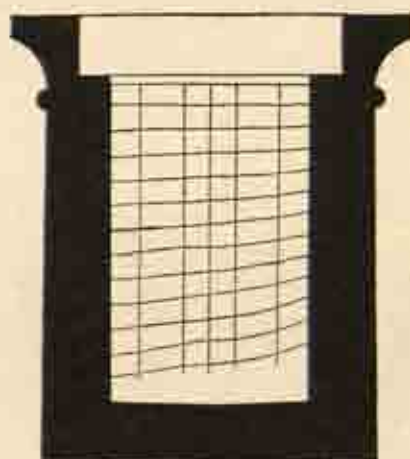
SECTION OF THE
CLEPSYDRA OF ANENHETEP III. Karnak.

Further, the maximum is in the middle of September, and the minimum in the middle of March, and those would be about the times of highest and lowest temperature, delayed by the massive building, and the conduction of heat through the earth. Thus the compensation for the viscosity of water agrees with the amount and the time of the change of scale. Probably it was empirically noticed that the rate of flow varied in summer and winter, and the scales were made to compensate this.

The Egyptian had gone further than this. It will be seen that the bowl has very sloping sides, and M. Daressy remarks this as an evidence of the merely ornamental nature of the work, as it would contain much more water between the upper than between the lower divisions. He concludes, therefore, that this work was fanciful, and was rendered useless by reason of ignorance. It is precisely this form which renders it more exact than a cylindrical vessel. Fluid drops faster in proportion to the pressure; when the clepsydra was full, it would drop nearly four times as fast as when the water had gone down to the lowest graduation. This change of rate the Egyptian tried to compensate by increasing the amount in the upper levels. Strictly, a parabolic outline is needed for a vessel with an equal

scale down it. This was nearly attained by taking a frustum of a cone and not carrying the scale to the bottom. The variation from a parabola over the part used would not be large. On testing this, the rate of dropping, when the water was at the top or bottom of the scale, would vary as 1:37, and the ratio of the areas or quantity of water at those levels is 1:26. Further, the scale is rather more open at the top than below, which would make the ratio of quantities 1:29. Thus the sloping form of the bowl and variation of graduation compensate more than three quarters of the error due to the variable head of water. As the flow averaged nine drops a second, it must have been a stream at the beginning, ending in rapid drops.

It appears then that by 1380 B.C., the clepsydra was mainly compensated, both for the changes of water level and for the changes of temperature. The knowledge of this was kept up in Egypt, as Athenaeus, of Naukratis, in the third century A.D., says that water "which is used in hourglasses does not make the hours in winter the same as those in summer, but longer, for the flow is slower on account of the increased density of the water" (II, 16).



SECTION OF THE
CLEPSYDRA OF EDFU.

The second clepsydra is from Edfu, of apparently the Ptolemaic Age. It is a cylinder of hard limestone, with a cornice round the outside and an expansion of the cylinder at the top, probably to hold a lid. It is 14.9 inches high, 13.5 across at the top and 11.8 below. Inside, the graduated cylinder is 10.8 deep and 6.6 across. The vertical lines of the months are not equally spaced. The circumference seems to have been divided by halving into eighths; then two months on each side, at the maximum slope of the circular lines, have been subdivided. The effect would be to agree with a lengthening out of the mid-season period and a shortening of the hot and cold period. The difference between hot and cold season is rather greater than in the Karnak clepsydra, agreeing to a fluctuation from about 68° to 86° Fahr. There was thus the temperature compensation as in the earlier example; but being a cylinder, and having equal divisions, there was no compensation for the flow varying by the pressure. Owing to carrying down the divisions close to the bottom, this variation is the greater, and the flow at the beginning would be eighteen times quicker than at the end. It would be by drops, as they would average only two drops a second.

The monthly variation in the flow being then fully accounted for by the temperature compensation, it follows that the Egyptian used equal hours, and did

not lengthen or shorten them according to the seasons. This is what we might expect from the accurate astronomical observation of early date, proved by the precise agreement of the pyramids to the cardinal points. In this the Greek and Roman usage was more primitive, as they divided the day and night into twelve hours, of whatever length the season made them, as the Turk does at present. Hence adjustments were required to regulate the flow of clepsydras according to the length of the day, as described by Vitruvius in VIII, ix.

A point of Egyptian usage should be noted. Although Mesore was reckoned the first month of the year in the XIIth dynasty, yet by 1380 B.C. Thoth was the first month, as the third month on the clepsydra has the figure of Hathor, fixing that month to be hers. The Thoth year is, therefore, to be used in all reckonings of the XVIIIth dynasty, agreeing with its being more correct, astronomically, than the Mesore year from 1700 B.C. onward.

L'Eau dans l'Égypte Antique.—DARESSY, GEORGES. (*Mémoires de l'Institut Égyptien*, T. VIII.)

This Paper gives an account of the attention of the Egyptians to water supply. Regarding the sinking of the Delta there is quoted a Nilometer of Byzantine date near Kafr Dawar, the base of which was 1055 metres below sea level, which proves a sinking of at least this amount in fifteen centuries. Maqrizi states that Lake Menzaleh was flooded by the sea in A.D. 554, that is, in the reign of Justinian. A translation is given of an Oasis stele of the XXIIInd dynasty, recording the natural and artificial reservoirs made there, and a dispute as to ownership decided by oracle, to which sixteen witnesses added their names. Also a translation of another Nubian stele, of Ramessu II, concerning his orders to cut reservoirs on the road to the gold mines. It mentions that under Sety I they had sunk 120 cubits (200 feet) without reaching water, no light task through rock. His son succeeded in getting a supply, by only sinking a tenth of the distance.

Iron and Steel Institute. Autumn Meeting, 1916.

The Use of Meteoric Iron by Primitive Man.—ZIMMER, G. F. Svo, 44 pp., 9 plates.

This Paper is a valuable and conclusive study regarding the early source of iron from meteors. Hitherto there has been a general impression that meteoric iron was not fit for immediate working, and that it was too rare to be practically used. Hence the sporadic appearances of iron, before regular smelting began, in 1200 B.C., have been attributed to native iron from rock sources.

The practical use of meteoric iron lingered among the Eskimo until the early travellers described them. Hans Egede in 1721, Hearne in 1772, and Sabine in 1818, found that rude knives of iron were in use, all of meteoric origin. It was often very economically used, with a backing of other material; in one case the back of bone had many little flakes of iron fitted into a groove. These bits of iron had been hammered off one of the great meteorites of Melville Bay in Greenland, which are supposed to have weighed 5,000 tons originally. The softer mass has been nearly half removed in scraps, as it is a tough fibrous iron, containing 8 per cent. of nickel. The scraps when broken away were hammered out cold between stones. At least two other sources of such iron were used by the Eskimo.

Similarly, meteoric iron was used in South America, near the mouth of Rio de la Plata and in Paraguay. The Aztecs, also, in Mexico had a small amount of iron which they prized above gold, and which they asserted to come from the sky. Of earlier times ornaments of nickeliferous iron are found in burial mounds of South-west Ohio, also meteoric masses hammered more or less into shape. These are supposed to have been obtained from the Brenham meteor in Kansas, which weighs nearly a ton, and is of very ductile iron. Averrhoes states that excellent swords were made from a meteor weighing 100 pounds which fell near Cordova in Spain.

A list of instances of meteoric iron having been wrought includes cases from Prussia (2), Bohemia, Hungary, Russia (2), India, Java, Senegal, South Africa (2), Australia (2), North America (26), and Chile (4), 43 in all. Some of these are only trials, but often the use of the iron has been on a large scale. In Africa the products include dishes, lance heads, rifle bullets, and hoes. In Java swords were made of it for the Sultan of Solo, and an artificial imitation was supplied to his subjects. Modern trials of various meteors are instructive. The metal is in such a different condition to the artificial iron that ordinary methods of working do not succeed. It is to this that the prejudice is due, that meteoric iron cannot be wrought. When rightly worked it was found to be harder than ordinary iron, but was not hardened by heating and quenching. This is to be expected, as hardening is due to carbon in iron. In other instances the iron is found to be brittle when very hot, though it can be forged cold or moderately heated. The strength of the iron after working is much the same as usual, and it bears being sharply bent. Some of the Cape iron is soft, but is elastic and hard after hammering cold, can be rolled out thinner than paper, and polishes well.

A list is given on eleven pages of 287 falls of meteorites, of which 250 are known to be malleable, 32 undetermined, and only 5 non-malleable. They vary from an ounce or two up to 50 tons, but mostly weigh about 20 pounds. Smaller masses generally become burnt up at a white heat in passing through the air, so probably the usual size in space is much less than those that are found. Many meteors when they reach the earth are by no means smooth masses which would defy the use of stone tools. The intense heat has liberated more fusible portions, or made any volatile ingredients blow the metal into holes, so that the fallen pieces, as illustrated in the Paper, are spongy or with irregular projections. In this way it is practicable to beat out or break off portions. Another source of manageable pieces is the breaking up of large masses by heat when falling, or a cloud of small pieces travelling together in space. Thus many falls are multiple, in some cases thousands of pieces amounting altogether to over a ton, or over 5,000 nodules from the size of a pea up to a pound weight. Thus the material was often in a form which could be easily worked by stone tools. Five pages are occupied with the various ancient accounts of the falls of meteorites, or of sacred stones which fell from heaven.

A most puzzling matter is the very unequal distribution of meteorites on the world. The rotation of the globe should expose every part of it equally to the showers passing through space. They should be equally distributed in every longitude, though scantier toward the poles if moving in the solar system, as they would pass more obliquely through the air, and so be much more dissipated by heat. Yet actually the distribution recorded is extremely unequal. To some extent this is in proportion to the population, as the record must depend on the closeness with which the ground is known. Those that fall on dense forest or

scrub will scarcely ever be found, whereas on cultivated land the chances of discovery are a thousand times greater. Another main factor is the using up of the obvious iron meteorites; and conversely the ignoring of stony meteors that are of no use. This may be the cause of this strange inequality,

In Eastern hemisphere, 79 iron, 299 stone.

In Western hemisphere, 182 iron, 74 stone.

It is impossible to suppose a selective action in falling, and so we are driven to suppose that the Old World iron falls have been largely used up, and the New World iron falls have attracted most attention because they could be used. If, for instance, the number of iron and of stone falls was the same, the distribution would show that three-quarters of the Old World iron was used up and disappeared, and two-thirds of the stone falls in the New World were ignored as not being obvious or attractive. The one state is due to being an old settled land, the other to being a new settled land. Yet such causes could not account for 23 falls of iron in Chile, not one in the neighbouring Peru, and only one in England; or for a dozen times as many in Germany as in France. All general conditions seem equal in such cases, and the great difference in recorded numbers has yet to be explained. The inequalities of stone and iron falls strongly suggest how largely meteors have been used as a source for iron, especially in earlier ages when the use of ores was much less available.

Now that the whole question of the early source of iron has been thus greatly cleared, we may look again at the Egyptian connections. The word *bad-ne-pet*, "*bad* of heaven," has of course always been a favourite argument for the use of meteoric iron. The original sense of *bad* is not clear, for of course the meaning iron is secondary. There are several such words. *Ba*-wood or palm is evidently a worn form of *hant* palm. *Bad* "to marvel, or merit," derives from *bady* "marvellous," and *bua* "to praise." There seem to be two original roots of *baa*, a road and a loaf. From *baa* "a loaf of bread," is *ba* "offering bread"; and as we apply the terms for bread to other things, as a loaf of sugar, or of metal, or a cake of copper, so the Egyptian transferred his word for a loaf to copper or iron, or to a block of stone. Then as *metallum* in Latin and *metallon* in Greek was the name both of the mine and its product, so the Egyptian *baa* for stone or metal came to mean a quarry or mine. Thus there is exact analogy for the primitive word for loaf passing on to mean metal or stone, and then to the source of the metal. We maintain the word metal for all mined or quarried material when we speak of road-metal for stone. So *bad-ne-pet* means the stone or metal of heaven. The word then became transferred from metal iron to iron ore, the heavy haematite two-thirds the weight of metal; this is shown by statuettes being described as made of *bad-ne-pet*, and none are known of iron, but many occur of haematite.

We must not, however, conclude that the frequent use of meteoric iron proves that all sporadic iron in Egypt was from that source. Mr. Zimmer allows that the second earliest example—that from the Great Pyramid—was of terrestrial origin. If so, it was probably from some native iron, perhaps produced by reduction from basalt which contains 10 per cent. of metallic iron, and would be strongly reduced when flowing red hot over woods. The clearing up of the use of meteoric iron opens the prospect of its having been used in Egypt, but we need analyses in each case to settle whether the source was terrestrial or celestial.

NOTES AND NEWS.

As might be expected, there is little to report archaeologically from Egypt. There is, naturally, no British party out excavating, nor, indeed, is there from any European country; the Antiquities Department itself, like all other Government Departments, is denuded of all available men.

Meanwhile, the United States continue to excavate. Dr. Reisner has gone up to Nubia, where, no doubt, he will continue to unveil forgotten and unsuspected epochs in that country's civilisation. Mr. Fisher has returned to Denderah.

In Cairo, the work of re-arranging the Museum goes on slowly but surely under the direction of Mr. Quibell; as a matter of fact this is due to his individual efforts, which are occasionally supplemented by voluntary help. Recently, the assembling and classifying of the wooden coffins have been claiming attention.

Beyond this the opportunity is not neglected for sowing as widely as possible the good seed of Archaeology, which is offered by the presence of large numbers of soldiers—wounded and otherwise. Large parties are conducted round the Museum periodically, and though the majority may find it somewhat tiring, yet there are generally a few who show quite a keen interest. In the same spirit the lectures which are arranged at the various hospitals and convalescent homes include their proportion of Archaeology. Thus it may be hoped that after the war there will be found an increase in the number of those who realise that a science of Archaeology exists, and that it does not mean only senseless curiosities.

The same kind of teaching has been taken in hand by Mr. Wainwright with Young Egypt at the Tewfikieh School, where at present a very enthusiastic Archaeological Society meets once a week to enquire into the Past, and intends to make a series of visits to both the Antiquities and the Arab Museums, and to go excursions to those ancient sites and monuments available from Cairo. Moreover, it is thirsting to begin the study of hieroglyphs, for which it proposes to use Miss Murray's *Elementary Egyptian Grammar*. May good digestion wait on appetite!

Mr. Lawrence is still in Cairo in connection with the Intelligence Department. Report has it that the design of the new set of stamps for the Shereef of Mecca is at least in part due to him.

Some short time ago Mr. Hogarth was expected back again, and has no doubt arrived by now.

Prof. Myres has been heard of as leading an Odyssean life "somewhere in the Mediterranean."

M. Lacau—Sir Gaston Maspero's successor at the head of the Antiquities Department—is still at the War, as is M. Lefebvre, the Chief Inspector of Antiquities at Assiut. As Mr. Firth is in the Intelligence Department at Port Said, the work of inspecting all the Antiquities of Egypt devolves upon Mr. Edgar, whose own province of the Delta was already none too small.

One cannot but hope that the coming year will see the return to a more normal state of affairs in Archaeology as in the other walks of life.

The delays in the appearance of this Journal are necessarily due to the war conditions of all work in England. In the present number a coloured frontispiece is given instead of the usual two plates of portraits at the end.

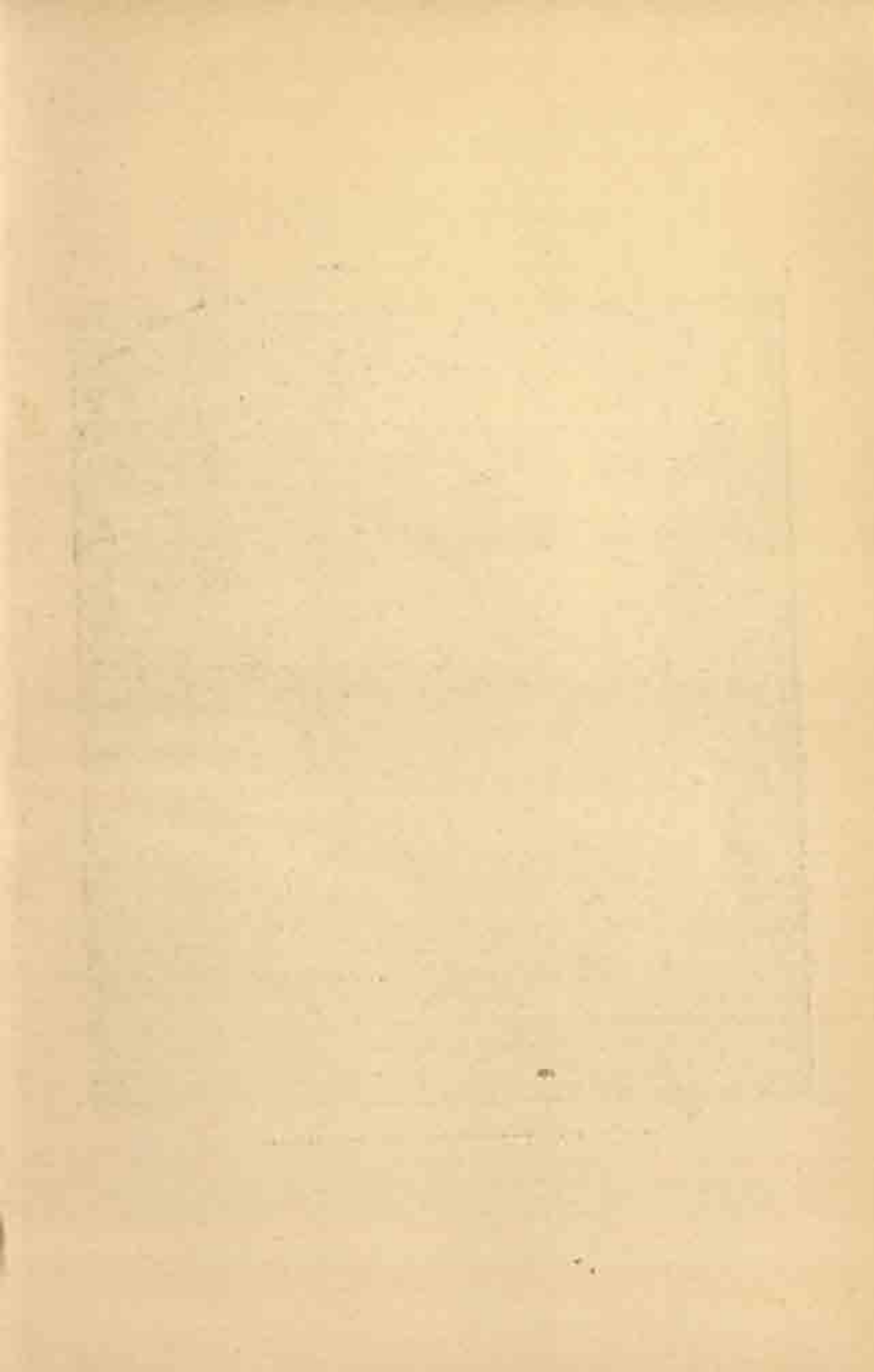




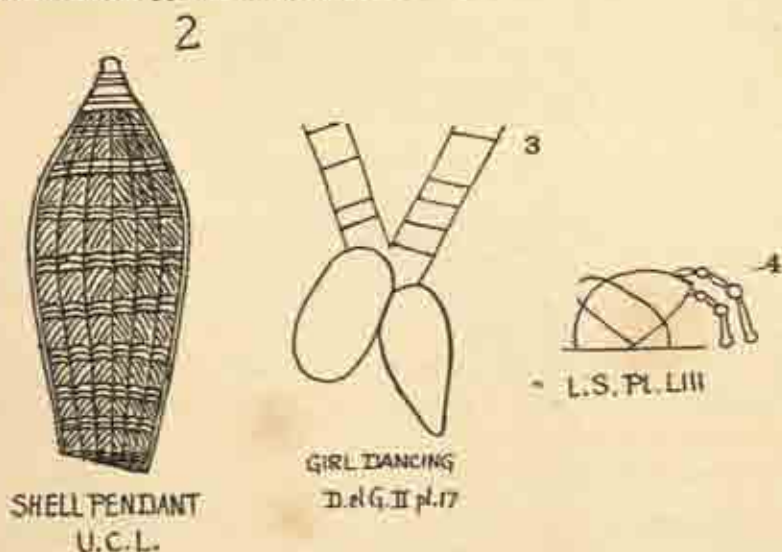
FIG 1. ANT, WEARING THE BUNDLE AMULET,

ANCIENT EGYPT.

SOME PENDANT AMULETS.

THE usual neck ornament for both men and women throughout the historical period is a wide collar of beads. Occasionally, however, the men and boys wear, instead of the wide bead collar, a pendant hanging on a string on which beads are also threaded. Early examples show that the string was sufficiently short to allow the pendant to lie in the hollow at the base of the throat. In the Vth dynasty and later, the pendant swung on a level with the breast, or even as low as the waist. In the rare cases in which it was worn with the wide collar, it keeps its distinctive character as a separate ornament, the string on which it is slung being worn over or under the collar.

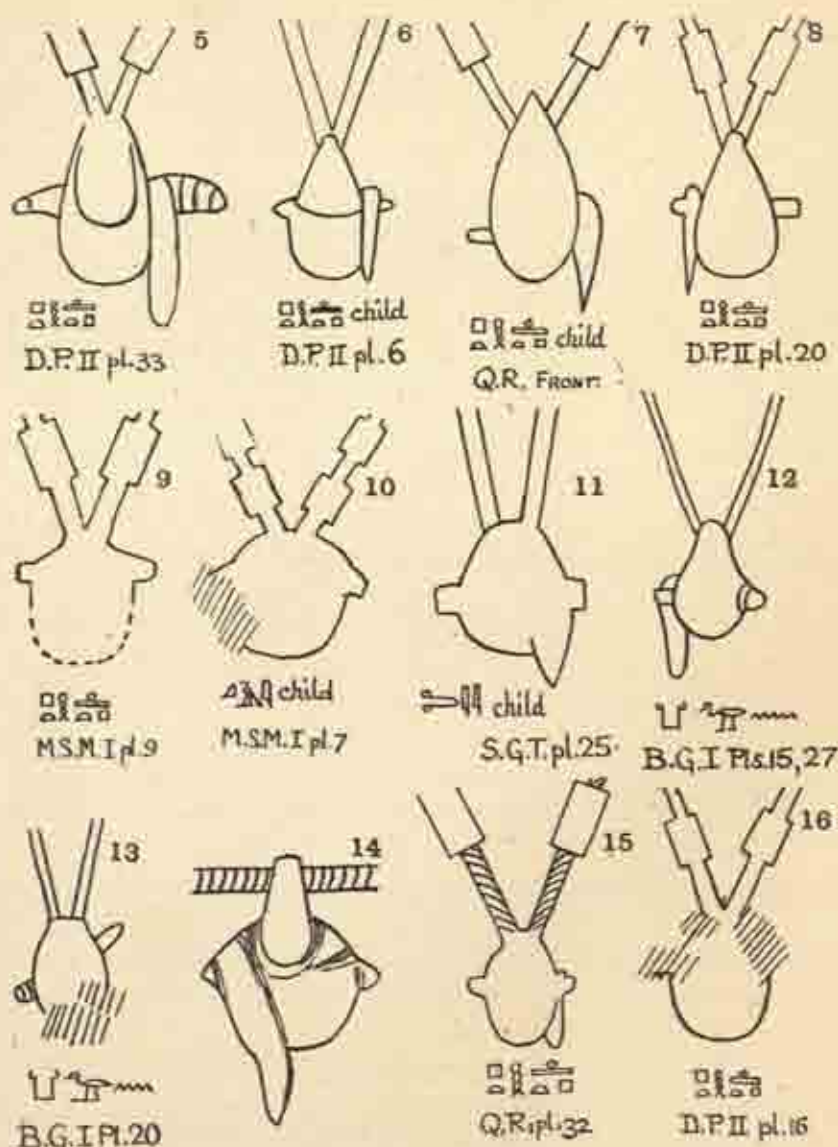
So far I have found but few instances of pendants being worn by women. With the exception of Ant (Frontispiece), the wife of Kagemne (Bissing, *Gemnikai*, I, Pl. 21), the daughters of Tehuti-hetep (Newberry, *El-Bersheh*, I, Pl. 29), the dancing-girl, Fig. 3 (Davies, *Deir el-Gebrawi*, II, Pl. 17), and a few others, the pendant at the neck appears to be a purely masculine adornment.



1. The pendant worn by Ant, Fig. 1, is clearly an amulet, consisting of three separate objects or packets lashed together at intervals and forming a small bundle, which is slung on a string passing round the neck. Such bundle-amulets are known in all countries; their virtue lies in the contents of the packets, and these vary according to the specific object desired to be attained.

The carved shell pendant, Fig. 2, of the Prehistoric period, seems to represent a similar amulet. There are six bundles and the lashing is very elaborate.

II. The dancing girl's pendant, Fig. 3, is composed of two indeterminate objects. From the shape these might be fruits or nuts; but the colour of the oval one—blue—indicates something artificial. It is possible that they represent those hollow pear-shaped or round objects of blue-glazed ware sometimes found in the XIIth and XVIIIth dynasties. The dancer wears round her neck a wide band composed of horizontal stripes of different colours. This does not appear to be what we now call "ribbon," i.e., a narrow woven strip of silk or other material with



a selvedge on each side. At first sight it looks like a strip of cloth cut to the required shape with the raw edges sewn down to prevent unravelling. But the detail in the drawing of Tehuti-hetep's daughter (*El-Bershek*, I, Front.) shows that the band round the girl's head is of beadwork, of the same pattern as her bracelet; and as the band on which the pendant hangs is of the same design and colouring, one may conclude that it also is of beadwork.

The strange pendant, Fig. 4, appears to be the same as the dancing-girl's ornament; the description of the colouring is: "Le corps bleu; aux deux extrémités quatre perles (rouge, bleu, jaune, rouge), les attaches blanches" (Lacau, *Sarcophages*, p. 179).

III. The next class of pendant, Figs. 5-47, is found chiefly in the Old Kingdom, occasionally in the Middle Kingdom, and but rarely later. There are two forms of it, both equally early; in the one form there is only one oval object, in the other there are two. The best examples of the first forms are Figs. 5, 6, 35, 36. Of the second form, Fig. 28 is the clearest.

It is difficult to say what object is intended to be represented in these forms. Figs. 35 and 36 appear to represent some rounded object wrapped in cloth, of which one end hangs down. In Fig. 35 the whole is pierced with a spike-like object; in

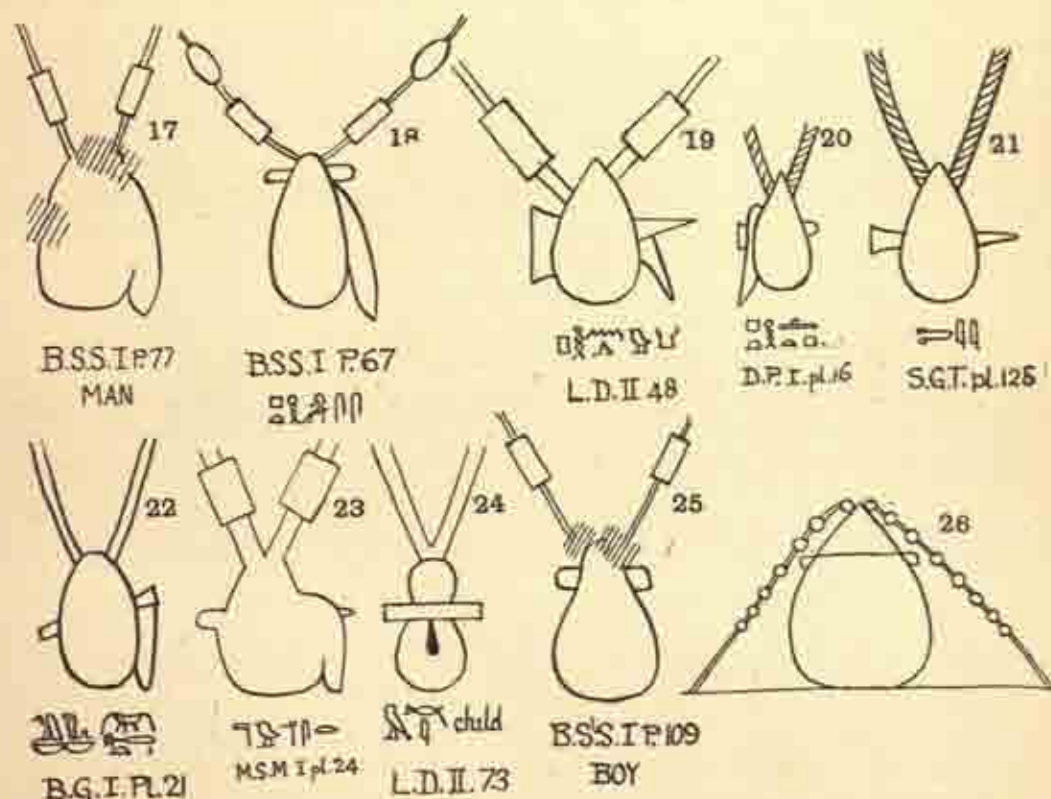


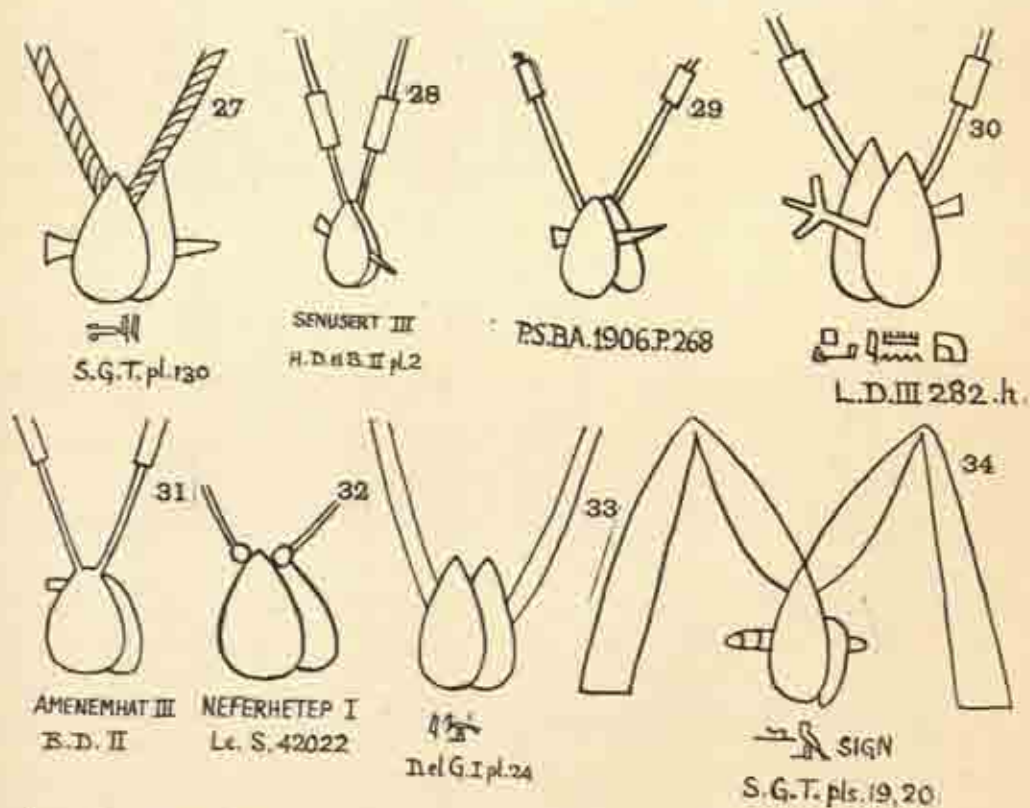
Fig. 36 the two projections are the same size and might form part of the inner portion of the pendant. Fig. 5 shows the projections very clearly, one is marked with curved lines as if to indicate a wrapping of cloth, the end of the bandage hanging down, while the pendant itself looks like a bag. Fig. 6 is more stylised, the amulet is not unlike an acorn, the projections being an integral part of the cup of the acorn. Dr. Schäfer proposes to see in it a knot tied in a linen band, but an examination of the examples given here shows that this explanation cannot be the right one, though it has been accepted by Prof. Valdemar Schmidt (*P.S.B.A.*, 1906, p. 268), and Dr. von Bissing (*Archiv für Religionswissenschaft*, Vol. VIII, Appendix).

This amulet is seen in many varieties, either egg-shaped, Figs. 7, 8, 18-22, 26, or bag-shaped, Figs. 5, 6, 9-13, 15-17, 24, 25, 35-47; the spike, which pierces it diagonally is represented as two symmetrical projections, Figs. 10, 11, 35, like the





handles of a heart-amulet, Figs. 9, 15, or as a straight bar across, Figs. 18, 24-26; the projections are, however, usually asymmetrical.

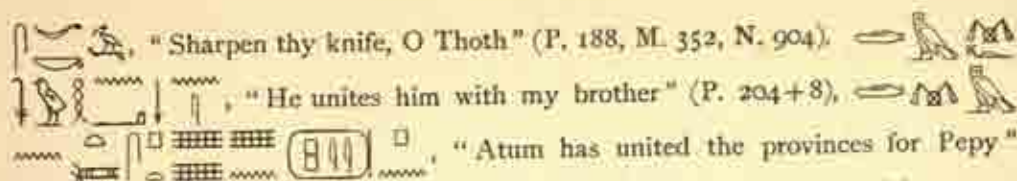
Though the second form, Figs. 27-33, is found as early as the Vth dynasty, it is more common in the Middle Kingdom. Fig. 27 shows two egg-shaped objects pierced or pinned together; this is very obviously the same as the well-known amulet, Fig. 28, on the breast of the statues of Senusert III found at Deir el-Bahri. The latest example of this amulet that I know is that of Pedu-Amon-Apt, Fig. 30, where one projection branches at the end.

Figs. 14, 35-47, are sketched from the model amulets on necklaces of the Old Kingdom in the University College collection. These amulets have been hitherto thought to represent the clenched hand with the thumb projecting below; but a comparison with the amulet of the sculptures shows it to be the same. The oval



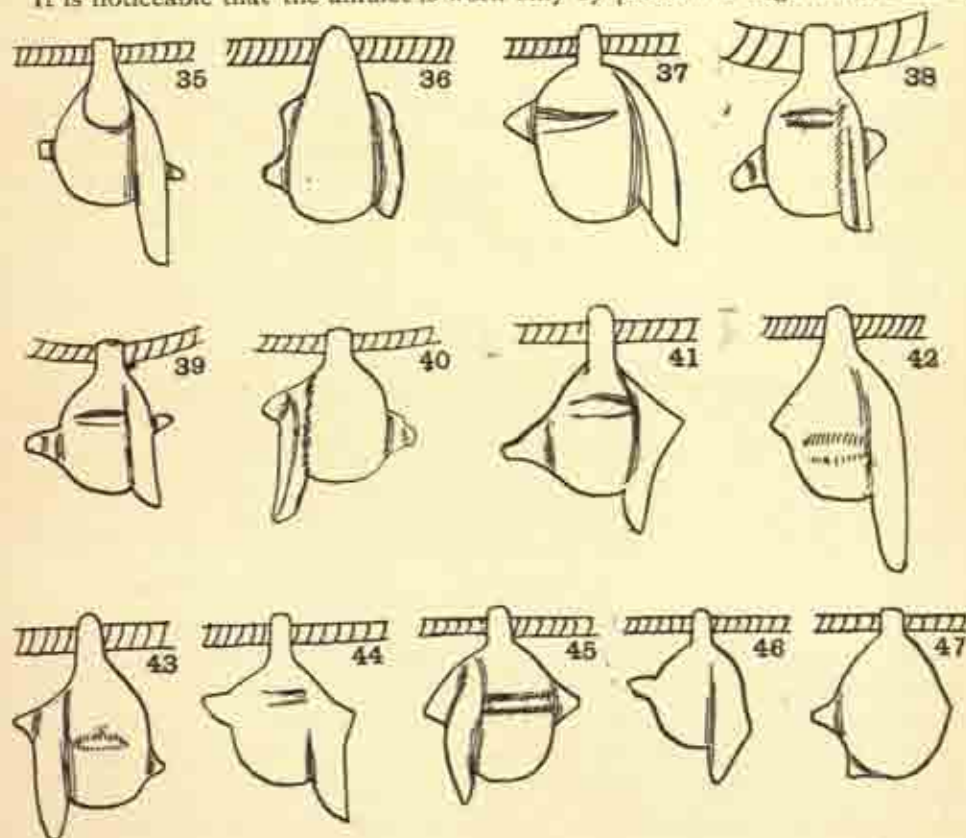
shape, the asymmetrical projection on either side, and the long "tail" starting from the shoulder and hanging below the base of the oval, are the same in the models as in the sculptures. The horizontal gash across the widest part in the carnelian examples, is evidently intended to represent the modelling shown in Figs. 5 and 6.

An interesting point is that this amulet is represented in the hieroglyphic sign . The early example, Fig. 34, sketched here is from the tomb of Thy at Saqqara, and shows the oval object with a horn-like projection at each side, and the "tail" hanging over one projection and reaching below the oval. The larger projection of the two is barred across as in Fig. 5. The amulet is slung on a wide ribbon caught up at each side, with the ends hanging down, so as to form a figure not unlike our capital M. The sign reads *dm* "To sharpen," or *dmz* "To unite"; both readings and meanings occur in the Pyramid Texts; thus,   




The meaning "unite" would apply to the amulet, which appears to be held together by the bandage and spike; but this meaning is of very little value in understanding the amulet itself and the reason for wearing it. In the later forms of the hieroglyphic sign the shape of the amulet is lost; and though the characteristic M-form is retained, the ribbons have degenerated into little flags, and the original appearance of the sign is entirely changed.



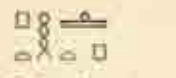

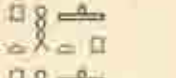


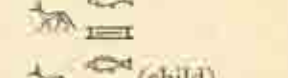



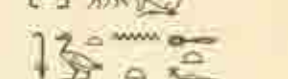

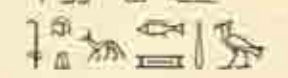

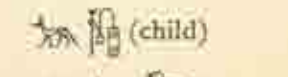
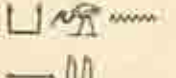

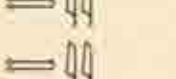



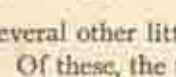
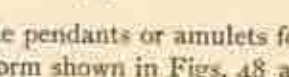
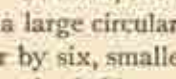
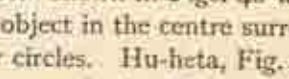
It is noticeable that the amulet is worn only by persons of high rank, and by



them only at certain times; usually when the wearer is represented in some sort of religious aspect, *e.g.*, on the false door, or receiving the funerary offerings. Kings do not wear it till the Middle Kingdom, and then not till the latter half of the XIIth dynasty.

It is possible that in the Old Kingdom it may be a badge, either the sign of an office or of some grade of rank. I have therefore collected the titles of the owners as given in the scenes in which they are represented wearing the amulet. Where one man holds many offices, I have taken only those which he holds in common with other wearers of the pendant who have only one or two titles. From these examples it would seem that the grade of is indicated, but against this must be set the fact that neither Thy nor his son hold any title, and the wife of Kagemni holds no office at all. The negative evidence is also important, in that

there are many nobles and officials in the Old Kingdom with the rank of  who wear no pendant or any neck ornament except the wide bead collar.


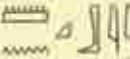

		L.D. II, 48.
		{ Q.R. Pls. 31, 33. D.P. I, Pl. 16.
		D.P. II, Pls. 6, 33.
		D.P. II, Pl. 16.
		Q.R. FRONT :
		M.S.M. I, Pl. 9.
		B.G. I, Pl. 21.
		M.S.M. I, Pl. 24.
		M.S.M. I, Pl. 7.
		B.G. I, Pl. 15.
		S.G.T. Pl. 121.
		S.G.T. Pls. 25, 130.
SON OF 		L.D. II, 974.

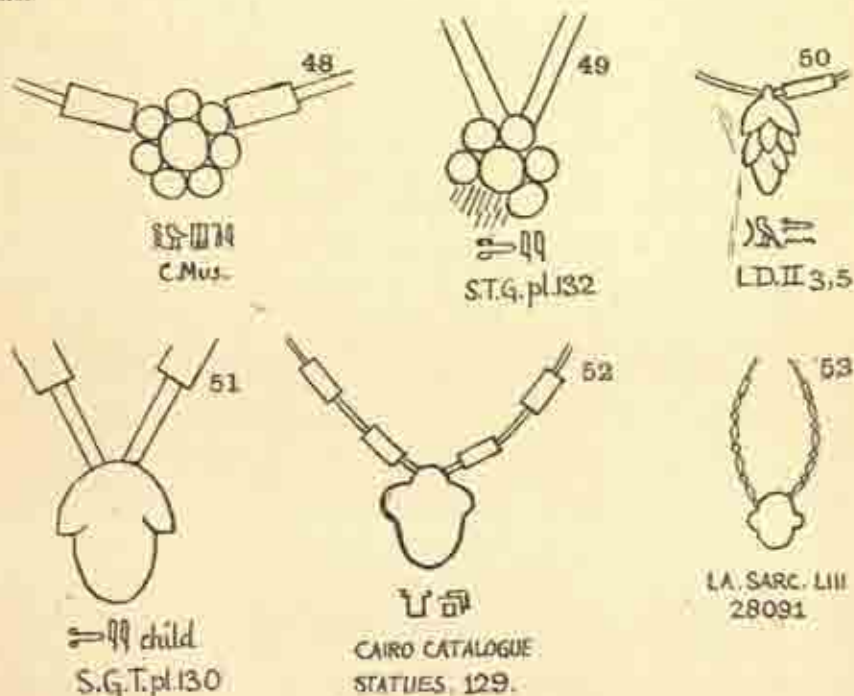
IV. Several other little pendants or amulets for the neck are found in the Old Kingdom. Of these, the form shown in Figs. 48 and 49 does not occur later. It consists of a large circular object in the centre surrounded, in the one case by seven, in the other by six, smaller circles. Hu-heta, Fig. 48, wears his amulet close round his throat in the fashion common in the IIIrd and early IVth dynasties; on each side of the pendant is a cylinder bead. Thy's pendant, Fig. 49, hangs low, slung on a long string. As no colour is indicated in either example it is impossible to know the material of this amulet; the form however suggests metal.

V. Another early amulet is that of Methen, Fig. 50, worn as usual close to the throat. The representation suggests a natural object, such as a fir-cone, or the sprout of some plant. The stringing with only one cylinder bead beside the pendant is worth noting.

Fig. 51, worn by the child Thy, appears to be a degenerate form of the same amulet. The detail has been lost with the exception of the characteristic calyx-like top. It hangs on a long string on which are cylinder beads at intervals.

VI. The amulets, Figs. 52-55, appear to be of one class. They are an artificial object as the colour shows. Fig. 52 is coloured blue, and therefore represents a blue stone,—lazuli or turquoise,—glazed ware, or metal, possibly copper; the beads are white, and the string black. Fig. 53 belongs to the Middle Kingdom; the pendant is red, probably carnelian; the beads are blue, green, and red, again representing

stones. Fig. 54 also belongs to the Middle Kingdom. Here the artificial character of the amulet is clearly seen, the large oval object having two rounded projections lashed to it. The central object and both projections are coloured dark green, the lashing is yellow. The necklace is probably shortened by the artist for exigencies of space; it consists of four globular beads, alternately red and green, on each side, and the red strings which secure the necklace terminate in loops like the hieroglyph . The name of this necklace is , *menqebyt*. Fig. 55 has a projection at the end as well as one on each side. No description of it is given, only the name , *arykhekh*, "That which belongs to the throat." It is threaded on a string on which small globular beads are also threaded at irregular intervals.



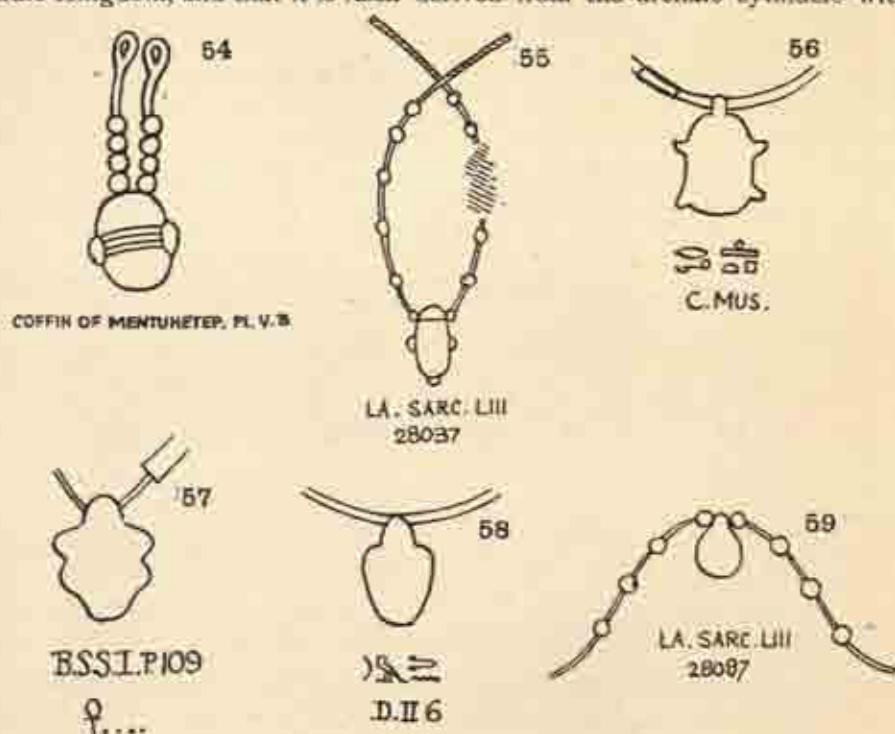
VII. The remaining examples cannot be put into any class: Rahetep's amulet, Fig. 56, is indicated in paint on his statue. It lies close to the neck as befits the early date, and is fastened by a plain string on which, as on Methen's, there is one cylinder bead. The colour of the pendant is grey, of the bead green, of the string white. Fig. 57 appears to be a degenerate form of Fig. 56. The sharp projections are rounded, and the shape is even more indeterminate than its original. It will require several more examples of this amulet before it is possible even to hazard a guess as to its origin and meaning.

Methen's pendant, Fig. 58, is totally unlike his other amulet, Fig. 50, and cannot be intended for the same; it must therefore be considered as a distinct form.

Fig. 59 also does not suggest a connection with any of the amulets previously described. The pendant is red, and the beads red and green, showing that they were all of stone.

The Stringing.—The different methods of stringing are very interesting. In the early examples the amulet is threaded on a short string, and therefore lies in

the supra-sternal notch. The string which carries Ant's amulet, No. 1, is plain and without further ornament; Rahetep's, No. 53, and Methen's, No. 47, have each one cylinder bead close to the amulet; Hu-heta's, No. 45, has a cylinder bead on each side of the pendant. The use of the bead thus strung is obviously important and it probably had a talismanic character. It is certainly remarkable that in the Old Kingdom, beads on the string which carries the amulet are always cylindrical. There must be some definite reason for this, as globular beads, ring beads, barrel beads and several other varieties of form were known at that period. It is therefore clear that special importance of a magical or religious nature was attached to the cylindrical form. In the Middle Kingdom a single oval bead with the name of the owner upon it was worn on a short string, so that the bead lay against the throat of the wearer, (Petrie, *Amulets*, Pl. VI, p. 21.) I would suggest then that the single cylinder bead of the early IVth dynasty is the origin of the name-bead of the Middle Kingdom, and that it is itself derived from the archaic cylinders with the

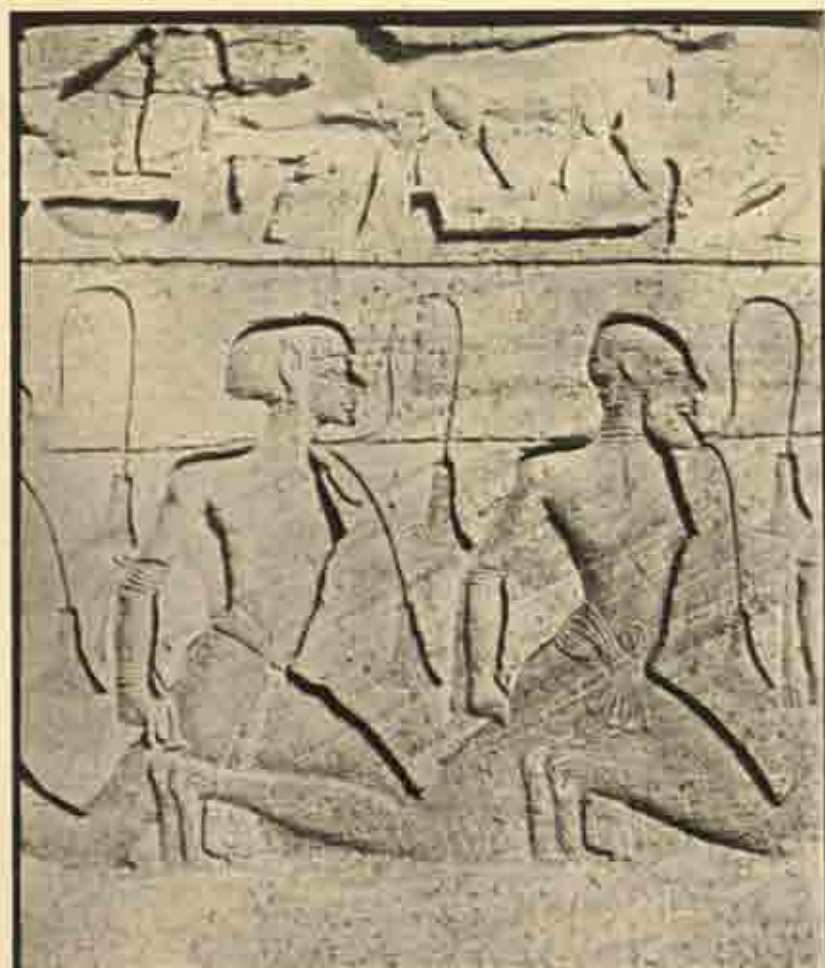


name engraved, which were used as rolling seals to mark the clay coverings of the offerings to the dead.

There is another point of interest as regards the stringing of the beads. In the earliest examples there is only one bead beside the amulet, worn like the amulet for magical protection. In the Vth dynasty the beads have increased in number, and are worn quite as much for decoration as for a safeguard. In the Middle Kingdom the talismanic character of the beads is lost, and they are worn purely for ornament; and instead of cylinders, globular beads are used. In Fig. 48 the beads are strung so closely as to touch one another and cover up the string. In Figs. 55 and 59 the beads are at intervals along the string; in Fig. 55 these intervals are irregular, in Fig. 59 they are regular. In both examples there is a bead on each side of the amulet; this is quite different from the Vth dynasty stringing, where the beads are always at a distance from the pendant.

RACIAL TYPES AT ABU SIMBEL.

"Ce sont des photographies prises au kodak des curieuses représentations de captifs, gravées sur le socle d'un des colosses à l'entrée du grand temple d'Abou Simbel, le colosse près du passage, à droite, lorsqu'on s'apprête à entrer dans le temple. D'après ce que je sais, ces types de captifs n'ont jamais été photographiés. Je me les avais dessinés à la main en 1890, et ce n'est qu'en hiver 1912/1913 que j'ai réussi à les photographier. Comme, entre ces deux dates, certaines fissures, qui existaient dans la pierre, ont été cimentées, il est arrivé qu'un des numéros, le 10,



3. NORTH ARABIAN. 2. ARMENIAN.
FOREIGNERS FROM ABU SIMBEL.

ne ressemble plus en tout point sur mon dessin et sur la photographie que je vous envoie. Sur cette dernière le menton a disparu, tandis qu'autrefois, lorsque je m'étais dessiné les visages des captifs, j'avais vu, ou cru voir, une assez longue barbiche. Aussi je donne ci-joint le petit croquis fait en 1890 du No. 10.

"Peut-être vous intéresserait-il d'identifier les différents peuples que les 11 captifs devaient symboliser, . . . quant à moi, j'y renonce, car toutes les séries de noms de peuples captifs, qui se trouvent sur le socle de différentes statues de Ramsès II que je connais, diffèrent entre elles et aucune ne semble correspondre aux 11 figures du socle d'Abou Simbel.

"W. GOLÉNICHEFF."

The above extracts from the letter of Prof. Golénicheff accompanying the photographs which he has kindly sent for this Journal, explain the circumstances, and it is with much pleasure that we add some notes, comparing these with other figures of foreigners in Egypt.

The first figure having lost the head, it is not reproduced here. No. 2 is of a very peculiar type, the long retreating forehead running up to a peak at the back



3. HITTITE.

4. ESDRAELON.

FOREIGNERS FROM ABU SIMBEL.

of the head. This seems to be the same as one of the prisoners of Heremheb in his campaign against the Hanebu (*Racial Types*, V, 2), and therefore a northern people. The peaked form of the head, and the rolls of flesh on the back of the neck below the occiput, mark the resemblance. The same form of head is characteristic of the Armenian to-day, though with a larger nose (Breasted, *Ancient Times*, Fig. 146). It seems then that this is probably copied from a nation of the east of Asia Minor, somewhere about the head waters of the Euphrates.

No. 3 is very peculiar for the bushy hair cut short at the base of the skull. There is no instance so marked as this, but some approach it, such as the Shasu (*Racial Types*, VI, 42) and Menti (95). It seems then that this is probably a North

Arabian type. It has traces of an earring, which is northern, as in Assyria; so it may not be far geographically from the previous Armenian.

No. 4 has the hair cut close, but slightly wavy all round the head; a short narrow beard, a small aquiline nose, and an earring with a square body. The wavy hair belongs to the people of the plain of Esdraelon, being seen in the people of Karpu . . . , or Harhaj, six miles south-east of Haifa, and Atha . . . probably



7. ATHA.

6. KENENA.

FOREIGNERS FROM ABU SIMBEL.

Kafr Adan, twenty-seven miles south-east of Haifa (*Racial Types*, VIII, 132, 136; IX, 138). The narrow beard is also seen in Karpu . . . (VIII, 133). As to the general locality see Geba next beyond the above in the Ramesseum.

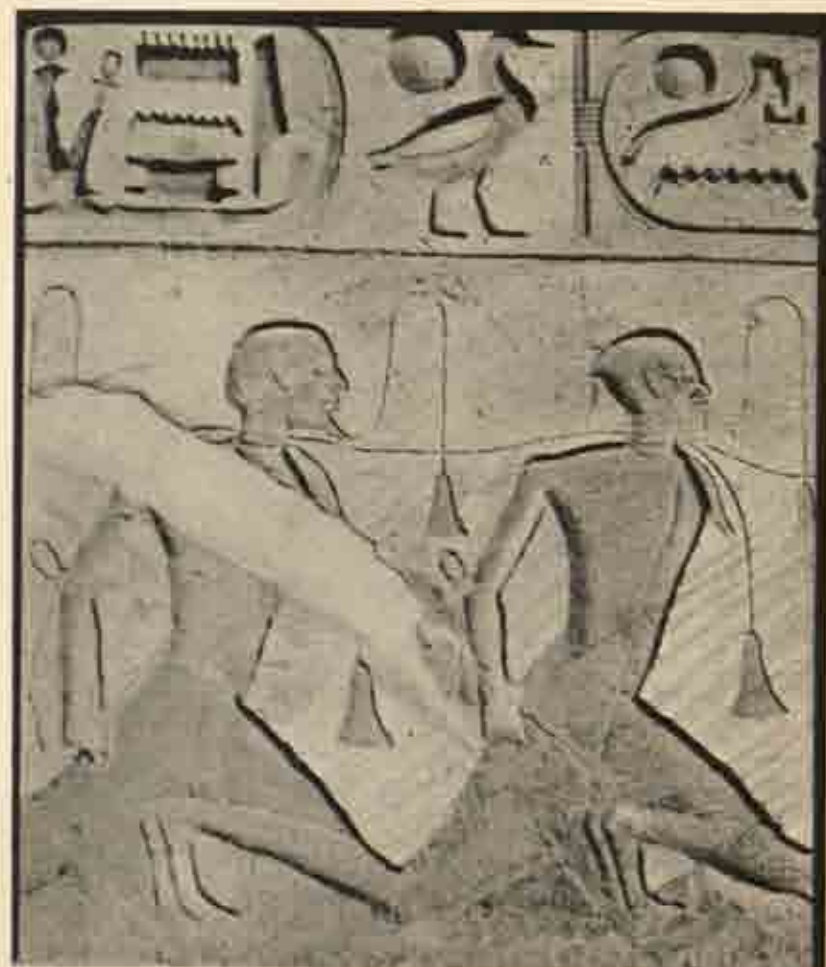
No. 5 is obviously Hittite, by the thickness of hair ending in a curl below the shoulder, see *Racial Types*, XI, 156. There is a ring in the ear like the head just cited, and a band with six large discs around the head, perhaps a form of crown worn by the Hittite chief. The face is better executed than most of the Hittite heads that we know, and this might well be adopted as the type head.

No. 6 is of the usual Syrian type, but is rather peculiar from the hair bulging out so fully below the head band. This is seen on the heads of the Amorites, but with rather a shorter face (*Racial Types*, VI, 64), while the proportion of face and

hair agree closely with the man of Kemena (*Racial Types*, VIII, 135), the Greek Kyamon, now Tell Keimun, twelve miles south-east of Haifa.

No. 7 has closely cut wavy or curly hair. This is the Karpu type, but most closely in face as well as hair is it the man of Atha (*Racial Types*, IX, 138), which from the neighbouring names of Kemena and Gaba is probably En Haddah, Greek Caphar Outheni, now Kafr Adan, twenty-seven miles south-east of Haifa.

No. 8 is a very different face, and the distinctive point is the long cap ending in a sort of liripipe. A similar cap appears on the head of a Syrian on the outside of the Great Hall at Luqсор (*Racial Types*, IX, 243), but without any locality stated.



9. PALESTINE SHASU.

8. PHOENICIAN.

FOREIGNERS FROM ABU SIMBEL.

The clue is given on the gates of Balawat where the tribute of the ships of Tyre and Sidon is accompanied by Phoenicians wearing the usual boatman's knitted cap with a turnover top. Though the top only hangs over in one figure, the kind of cap is clear, even to the loose rucks in it. Hence we can hardly avoid assigning this head to the Phoenicians, probably of the port of Haifa, considering the localities of the other heads.

No. 9 has the hair cut short behind, though less marked than No. 3. The thin long beard is unlike the usual Syrian, but is that of the Shasu (*Racial Types*, VI, 42), and the face is as closely like that, as if both had been carved from the same man.

No. 10 is very nearly the same type. As Prof. Golénicheff states, the chin and beard have been lost, and the space is now filled with cement. I have therefore copied on to the blank the drawing made by Prof. Golénicheff previously. The different character of the ground, and of the lines, will make it quite clear how much depends on this hand copy. This head is of the general Shasu type, but in the shape of the head and nose it is most like the man of Damascus (*Racial Types*, VII, 117), though his beard is not so long. The more forward growth of the beard is like that of the Bedawy, as in the desert folk at Beni Hasan. A similar forward beard is seen on the Judeans of Sheshenq's list, as of Ganata and



11. NEAR TYRE.

10. PALESTINE SHASU.
(Beard added over repair.)

FOREIGNERS FROM ABU SIMBEL.

Beit Hanina four miles north of Jerusalem (*Racial Types*, VII, 36, 37). Altogether these two heads, 9 and 10, may be taken as the settled Shasu of the eastern side, anywhere between Damascus and Judaea.

No. 11 is most like the South Syrian in the less full growth of hair and slighter face, see the Innuaa (*Racial Types*, X, 81A). Yanoah, now Yanuh, six miles east of Tyre, and a South Syrian, *Racial Types*, IX, 35.


Thus these ten figures begin with the Armenian of the North, and then belong to the Galilee region North and South.

W. M. F. P.

SOME FRESH INSCRIPTIONS.

IN the magnificent collections of Sir Frederick Cook at Richmond there are several Egyptian objects, and by his kind permission I now publish two of the inscriptions. There is no provenance for either of them; they were bought more than forty years ago by the late Sir Francis Cook.

I. False door of Ni-kau-Ptah. Limestone, height 56 in., width 41 in.

Panel.—Ni-kau-Ptah wearing pleated loin-cloth, facing to right, seated before a table of offerings on which are the usual upright leaves. Between Ni-kau-Ptah and the table, the hieroglyphs "Bread, a thousand," on the other side of the table, "Beer, a thousand." A standing figure facing to the left holds a censer in the right hand and lifts the cover with the left. Between this figure and the table, "Scribe of the treasury, Ptah-kha-f." The inscription is curiously arranged. At the top it is divided above the table of offerings; the part to the left reads from right to left; that to the right, from left to right. The inscription behind the standing figure is so arranged as to bring the three  in line. Above the seated figure: (1) "The Royal Scribe of the accounts of Pharaoh, (2) he who is in the two Houses of Gold, he of the Purification-house, (3 vertically) Ni-kau-Ptah." Above the standing figure two horizontal lines of inscription: (1) "By his brother of eternity, (2) He sacrifices. Behold him." Behind the standing figure: (1) "A burial (2) in the beautiful West (3) among the worthy ones."

Lintel.—A single line of hieroglyphs, reading from right to left: "May the king give an offering and Anubis who is in the Shrine of the God. A burial, in the necropolis of him who is worthy before the great God."

Left side, inner jamb.—Two vertical lines of inscription, below which is the standing figure of Ni-kau-Ptah, holding a long staff in his left hand, a folded cloth in his right, and with his name inscribed horizontally above him. The inscriptions read from right to left:—(1) "Follower of the treasury, priest of King Sahu-Ra, (2) priest of the Ra-em-sep obelisk, king's uab-priest, (3) Ni-kau-Ptah."

Left side, outer jamb.—One vertical line of hieroglyphs. "The instructor-scribe of the treasury, favoured of the king." A second line was obviously intended as the name has been begun both top and bottom, and was to have been carried horizontally across both lines. The sculptor has managed to achieve the "Ptah" only, and the second line is left blank as well as the remainder of the name.




Right side, outer jamb.—Two vertical lines of inscription, reading from left to right: (1) "Oracular priest of the Rekhyt-bird . . . Overseer of the treasury, (2) . . . offerings(?) and fatlings, [sealbearer?] of the king of Lower Egypt." The inner jamb is uninscribed, and the drum also.





The style of the inscriptions and figures dates this piece to the VIth dynasty. The provenance is probably either Saqqara or Abusir, for Ni-kau-Ptah not only bears the name of the god of Memphis, but is also the priest of the Ra-em-sep obelisk and of King Sahu-Ra. The king was buried in one of the pyramids of Abusir; and the obelisk is one of the four obelisks the names of whose priests are found in the tombs of Saqqara. The site of one of these obelisks was at Abusir.






FALSE DOOR OF NI-KAO-PTAH.

The early form of the obelisk is worth noting: the wide base rises from a low square platform, the pillar itself is short, very little taller than the base, and is surmounted by a circular disk. This disk was probably of polished metal—gold or copper—fastened into a slot in the top of the obelisk.

The titles are interesting, though there is nothing unusual. Ni-kau-Ptah held three offices in the *Per-hez* or treasury, but there is nothing to show whether he held them contemporaneously or consecutively. I incline to the belief that they were held consecutively, first the , then the , and finally the . The cult of King Sahu-Ra continued till Ptolemaic times, though naturally most of the priesthoods are found in the Old Kingdom.

It is unfortunate that the upper part of the right outer jamb is too much destroyed to be legible. The first title appears to be the fairly common one,  *medu rekhyt*. This has been translated "Staff of the people," which though literal conveys little meaning. The sign  when it occurs in titles, at least in the Old Kingdom, is associated with the name of an animal-god, Apis and *Ka-hez* the White Bull, who is possibly Mnevis. The word  *medu* means "speech, word," and when applied to a person would mean "Speaker." The animal-gods, especially Apis, were essentially oracular, and as the oracles were always interpreted by the priests, the title, , may reasonably be translated as "Speaker [*i.e.*, interpreter of oracles, or oracular priest] of Apis." There is reason to believe that the crested plover was at one time a sacred or even divine animal. On the great mace-head of the Scorpion king there is represented a row of standards from each of which a rekhyt-bird is suspended by the neck (*Hierak.* I, Pl. XXVI, 1). Frazer points out (*Ad. Att. Os.* I, 146, 228, ed. 1914), that in some parts of the Near East the sacred animal or incarnate god was sacrificed by hanging on a pole; this was especially the case with birds. If then we see in this bird a primitive deity, the title will read "Oracular priest of the plover-god."

The name Ni-kau-Ptah, "Belonging to the *kas* of Ptah," is not very common. I have three references to it (*Names and Titles of the Old Kingdom*), two from Saqqara and one from the Wady Hammamat. In the tomb of Ptah-uash at Saqqara (Mariette, *Mastabas*, D. 38), there is a , who holds the titles , and therefore cannot be the same as the owner of this false door; the other two have no titles. The name Ptah-kha-f, "Ptah is he who appears," is rare. I know it only as the name of a bearer of offerings in the tomb of Ptah-shepses I at Saqqara (Murray, *Saqqara Mastabas*, I, Pl. XXVII), whose only title  refers to his temporary position in the funeral ceremonies.

II. Round topped stele. Limestone, height 22 in., width 17 in.

Obverse.—On left, a goddess in a tree, facing right, giving food and water to a man and woman who kneel before her. The tree has horizontal bands round the stem, and stands in the cup-shaped depression in which all large and important trees are represented; this depression was for holding the water when the tree was watered. The two balls probably represent stones, which protected the roots and at the same time allowed the water to percolate through. The goddess wears the

name of Isis on her head, and holds in her left hand a tray of food and in her right a vase from which pour four streams of water; two fall into the hands of the man, while two pass over his head into the hands of the woman behind. The man kneels on the left knee; he is clad in a skirt-like garment fastened at the waist;



STELA OF TEHUTI-HEHEP AND KAYAY.

he wears necklace, bracelets and armlets; and his wig, short at the back, falls in a lappet in front to his breast. The woman kneels on both knees; she is clothed from head to foot in a long cloak, worn over a close-fitting dress with short, pleated, bell-shaped sleeves, her wig falls almost to her waist, both back and front; she

wears no ornaments. Behind her is a small, standing, figure of a man with a shaven head, dressed in a long-skirted garment; he carries a papyrus-stem in the left hand, and raises the right in adoration. Round the top above the figures are seven vertical lines of inscription: (1) [Above the goddess] "Hathor, Lady of the West. (2) Chapter of drinking water (3) by the Chief of the Masha- (4) kabu, (5) Tehuti-hetep, true of voice. (6) The Lady of the House, Ka- (7) yay, true of voice. His son . . . -hes."

Behind the tree is one vertical line of inscription: "She gives water as is right."


Below the scene are four horizontal lines of inscription: (1) "May the king give an offering, and Osiris, Horus, and Isis, may they give bread and beer, air, water, incense, (2) and all things good and pure, coming forth before them; for the *ka* of the only excellent one, the regulator (3) of the embassies of the king to all foreign countries, he who belongs to the two feet of his god, he who enters (?) to his lord, he who is beautiful (?) before him; the Chief of the Ma- (4) shakabu, Tehuti-hetep, true of voice, belonging to the Rowers of Rameses, beloved of Sekhmet."

Reverse.—Osiris, enthroned, facing to right; behind him, the emblem of the West; in front a table of offerings piled with cakes and surmounted by a bull's head and haunch. Under the table to the left is a vase on a stand, with a lotus twined round it. Facing the god are a man and woman standing. The man is dressed in a long-skirted garment, he wears a short beard, and his wig falls to the breast in front, to the shoulder-blades behind; his right hand is raised in adoration, and in the left he carries a sheaf of flowers. The woman wears a long, plain cloak opening over a pleated robe with short, pleated, sleeves; her wig falls to the waist, back and front, and her head is adorned with a cone and a lotus-blossom. Round the top, above the figures, are eight vertical lines of inscription: (1) "Osiris, lord of Abydos. (2) May the king give an offering, and Osiris, may he give bread and beer, (3) cool water and incense, for the Chief (4) of the Mashak- (5) abu, Tehuti- (6) hetep, true of voice. (7) The Lady of the House, Ka- (8) yay, true of voice."

Below are three horizontal lines of inscription: (1) "May the king give an offering, and Osiris, Ruler of the Two Lands, may he grant to me that I may enter among the souls ex- (2) cellent and all the gods around him, that my offerings be increased before me, [for] I am he who is alone (3) among them. For the *ka* of the Chief of the Mashakabu, Tehuti-hetep, true of voice, belonging to the Rowers of Merenptah, beloved of Sekhmet."

Sides.—Down each side, *i.e.*, on the thickness of the stone, is a vertical line of inscription: "The Osiris, the Chief of the Mashakabu, Tehuti-hetep, true of voice."

On the side to the left of the obverse, Tehuti-hetep's name is written with the moon-crowned ape; on the other side, it is written with the ibis on a perch. The same variation in writing occurs in the other inscriptions on the stele.

The name Tehuti-hetep is rare, the usual compound with Tehuti being *mes*. The name Kayay is not uncommon, it is found as Kayuy and is spelt in various ways, as is often the case when several weak letters come together; one of the most usual forms is 

I am indebted to Dr. Alan Gardiner for calling my attention to the occurrence of the word  elsewhere, and for giving me the following references: Tomb of Nebnefer at Deir el-Medinet



(mentioned also in Gardiner and Weigall, *Topographical Catalogue of Theban Tombs*); Pap. Leiden 350, Verso III, 3; British Museum 1183 (new 701). Burchardt (*Alt-kanaanischen Fremdworte* 513) translates the word *Aufseher*, "Overseer,



STELE OF TEHUTI-HEHEP AND KAYAV.

surveyor," and gives references to Pap. Bulak 12, 6, and Harris 28, 5. Nebnefer's tomb is absolutely dated to the reign of Rameses II, and the other occurrences of the word are also of the middle and late New Kingdom.

Tehuti-hetep holds the interesting title of *ml̄ npt n̄-sut er khast neb*, "Regulator of the king's embassies to all foreign countries." This, taken in connection with his principal title, Chief of the Māshakabu, suggests that he had strong foreign connections. The epithet "Belonging to the feet of his god" is not very common, the more usual form is "Belonging to the feet of his lord." For the next two epithets I can find no other examples. *Khen* as a verb means "to go in, to enter," but is usually determined by the walking legs. The title of "Rower" of the king appears to indicate an important office, as it is found on both sides of the stele immediately after the name of Tehuti-hetep in a very conspicuous position. The king's names are not in cartouches.

The names of Rameses and Merenptah give the date of the stele as the latter half of the XIXth dynasty; and the mention of the goddess Sekhmet suggests Memphis or Thebes as the place from which it came.

M. A. MURRAY.







FRENCH EGYPTOLOGY DURING 1916.

IN the *Comptes Rendus* of the Académie des Inscriptions for April, 1916, M. Seymour de Ricci edits a Greek inscription which has been stored in three pieces in the Alexandria Museum for some years. The third of these fragments had remained unpublished, and it is by means of it that much of the text can now be restored.

The inscription is an extract from the official records of the Idiologus of Alexandria for the 27th of Thoth, of the fifth year of Hadrian, A.D. 120. It concerns the trial of one Ulpus Potamai—who appears to have been a freedman of Trajan—and a troop of guards of the necropolis who, according to M. de Ricci's restoration of the letters, were Lycians. Their corps was called a *politeuma*, or a municipal brigade, a word used for a body of Cretans in the Tebtunis Papyrus No. 32.

The inscription, which was probably set up as a warning to others, sets forth that the Comogrammateus of Mareotis had ordered Potamai and his guards to be tried for neglect of their duty in safeguarding the cemeteries. The punishment awarded them does not appear, owing to the text being broken away.

In a communication to the French Academy, M. A. Moret has been explaining a rare term used in several of the decrees found by MM. Adolphe Reinach and Weill at Coptos. His essay concerns the correct meaning of the sign , as a description of one of the functions of the *meriton*, or workmen, of the IVth dynasty era.






He reaches his result by showing from a text that  may be rendered also by , and that both mean *four*, the kiln or furnace of a pottery. The sign  therefore qualifies an artisan as a potter.

The whole of Vol. XX of the *Sphinx* of Upsala is occupied by a transcription and translation of the Harris Magic Papyrus by Ernst Akmar (formerly Ernst Andersson). He reviews the rendering of this hieratic text into hieroglyphs by Chabas and Budge, and gives his own hieroglyphic version in 45 pages of 12 lines each. Then in some 40 pages M. Akmar adds the reasons for his differing from the transcription of the hieratic, and consequent translation by Dr. Budge, in the *Facsimiles of Hieratic Papyri*, 1910: "The Beautiful Chapters of the Songs which drive away him that is submerged." The changes—many of them of minor importance for comprehending the general ideas expressed in the text—are very useful for all students of the hieratic script, and apply to quite half the lines of the manuscript. To comment upon the emendations of M. Akmar here would need much space and be difficult to follow without printing a facsimile of the papyrus. The difficult passage speaking, according to Dr. Budge, of the Crocodile Makos being "bound fast with four fetters (made of) Metal of the South"—for the real meaning of which harpoons had been suggested—M. Akmar renders "bound to the four pillars of greenstone of the South, which are on the bow

of the Ship of Ra.* If he is correct, this is one of the chief changes he makes in the wording of this singularly useless series of chants or incantations.

The second fascicule of Vol. XII of the *Bulletin de l'Institut Français d'Archéologie Orientale* is almost entirely occupied by M. Georges Daressy and Mr. F. W. Read upon the Palermo Stele: apropos of M. Gauthier's publication of the fragments at Cairo in the *Musée Égyptien*, Tome III. [A discussion of this appeared in *ANCIENT EGYPT*, 1916, pp. 182-184.] Mr. Read, in his remarks, gives good reasons for considering that we now have pieces of three copies of this early text.

M. Daressy's essay, which extends to more than 50 pages, is the first publication to utilise fully M. Gauthier's edition of the Cairo Museum fragments for restoring the regnal successions and chronology of the first four, and part of the fifth, dynasties after Menes. He provides elaborate tables in which he first gives his views based upon the new evidence of the list of Pharaohs for the first three dynasties, as now disclosed by the additions we have to the Palermo Stele inscriptions. He then discusses all the information given by these texts, comparing it with the Turin Papyrus List of Kings, those of the texts at Abydos and Sakkara, and Manetho and Eratosthenes. Then two special tables are devoted to the fourth and fifth dynasties, another to the pre-Menite kings, and, finally, he discusses the Horus-titles of monarchs of the first three dynasties. M. Daressy concludes by saying: "It is only some twenty years ago that the three first dynasties were considered as legendary. Discoveries made since then have demonstrated that they certainly existed, and have left us monuments. Thanks to the Stone of Palermo, we are now able to control the Pharaonic lists and the Greek classics."

It is pleasing to note the entrance of a British Egyptologist into the pages of the *Bulletin* of the *École Française* in the person of Mr. Read. His article is more confined to a review of M. Gauthier's paper in the *Musée Égyptien* and the heliogravures of the Cairo fragments there provided. Mr. Read suggests that the sign  in line 6 of the largest of the new pieces, which is followed by a lacune and then , should be restored by the hieroglyphs   , as we knew from the old stele that these Annals occurred at that position, and this seems to be the case.

He also points out the great importance of the new fragments, proving that in the complete inscription for the pre-dynastic kings there was not only a row wearing only the crown of Lower Egypt, but also a series wearing that of Upper Egypt. Because, although we knew that the stele at Palermo had a series of pre-Menites wearing only the lower Egyptian crown, that did not prove it intended to represent them as ruling over Lower Egypt only; because Pharaohs we know, who governed the whole country, are often shown with only the single crown. Now, we see that there were on the stele two rows of kings, one wearing the crown of Lower and the other that of Upper Egypt; it gives strong reasons for thinking that it was intended to indicate pre-Menite sovereigns who reigned over Upper and Lower Egypt respectively.

M. Étienne Combe edits eleven Arabic funerary epitaphs dating from before the Tulum dynasty, mostly merely citations from the Koran. Some curious Saracenic sculptural decorations are illustrated from Dr. Fouquet's collection.

M. Henri Munier treats of some Coptic manuscripts of the Old and the New Testaments. These, as a rule, are not of high value for textual criticism, because

one is never sure that divergences from the *textus receptus* are not due to scribal carelessness. One of the manuscripts in this case, which, among other texts, gives part of Genesis xxxvi, is of importance. The scribe, or the writer this scribe was copying, appears to have been a learned man. The twenty odd verses of Genesis xxxvi contain chiefly a long list of names, particularly interesting because duplicated, with variations, in 1 Chronicles. The Coptic titles as a rule agree closely with those in the Codex Alexandrinus, but where that does not very nearly transmit the original Hebrew form, the Coptic scribe in his text endeavours to do so.

Several of these tribal names also appear upon Egyptian Monuments or papyri, such as Lotan, Hor and Aiah.

The first fascicule of Vol. XIII, that for 1916, of the *Bulletin* contains what is practically a complete treatise upon the "Logement et Transport des Barques Sacrées et des Statues de Dieux dans quelques Temples Égyptiens," by M. Legrain. He commences by giving a technical description of the construction of the litter or platform upon which the priestly porters carried the sacred boats of the various temples. The number of the supporting poles or bars varied according to the periods of Egyptian history, and to the deity whose shrine they bore. The bearers were all strictly arranged according to precedent, certain members of the hierarchy being assigned to a definite place. The carriers of Amon's sacred barque at Karnak numbered thirty. They were all priestly duplicates of deities: fifteen of them of the "Paout of the great gods, the Spirits of Pa," and the same number of the "Paout of the lesser gods, the Spirits of Nekhen." They thus symbolised the rows of these deities found displayed in vignettes in the illustrated funerary papyri. Where these deities had animal heads, the representative priestly bearers are shown wearing masks and headdresses to symbolise the divine type. These gods themselves are represented upon the sculptured reliefs or paintings upon the shrine halls, where the sacred barques were deposited. The arrangements for the portage of the barques absolutely illustrate the mythology of Egypt. Thus, at first, the Amon shrine litter had but three bars, later augmented to five, with six bearers to each bar. It would be thought that the increase in number was owing to the greater magnificence of the temple, the larger size of the boat-shrine carrier itself, with its greater decorations as the riches of the temple increased. It would appear as if the change had a religious origin, because the earlier Paouts were enneads, and so the bearers representative of each were restricted to nine. M. Legrain thinks that in primitive times these priest-gods tugged or hauled the boat containing the god's shrine on the river, or upon a sleigh to convey it from the Nile bank into the shrine, before the idea of shouldering the litter carrying the barque became fashionable. M. Legrain goes on to describe fully the dimensions and shape of the halls wherein the litter and the barque were placed and guarded, and the ceremony of their deposition therein.

One special occasion when they were taken out in procession and returned was that of a coronation. He gives a somewhat full account of this function, and compares some of the ritual with that at Jerusalem as given in Kings and Chronicles. The coincidences, however, appear to be accidental, or only such as would naturally arise from the similarity of the occurrence. The rôle of the chief priest and of a priestess, who represented temple deities at all goings forth of the sacred barques, is recounted, as far as they can be restored to us, by the reliefs and

inscriptions, chiefly those at Karnak, where M. Legrain has resided for so many years.

In the second part of his memoir he describes similar ceremonies at many other temples, such as Luxor, Qurnah, Deir el-Bahri, Medinet Habu, Edfu, Denderah, Esneh, and Kom Ombo. The accounts derivable from Ptolemaic temples are necessarily of late date, but, doubtless, strictly in accord with more primitive practices. This story of the sacred barque goes back to the most archaic period of Egyptian civilisation, because it is the earliest of all representations of the cult of the gods, as shown upon the most primitive pottery. Thereon we see the boat with its shrine for the deity being rowed along the Nile, the totem symbol of the god upon the summit of a mast, and the populace upon the river banks acclaiming the boat's passage.

In the same number of the *Bulletin* M. G. Daressy again takes up the identity of the animal shown as representative of the god Set, his interest in the question having arisen from Dr. Schweinfurth having recently suggested it is the *Oocterops* or Ant-eating "Aardvaak" of South Africa. M. Daressy concludes it is an imaginary animal, designed to depict all the most contrary attributes to those of the boar which was the principal form of the Set-animal in the earliest times. To support this view he gives a table of the features of the boar, and the diametrically opposite ones of the Set-creature. He believes the basic origin of the conception was to design a fictitious animal so physically helpless that he could not possibly injure Horus. It will be remembered how much some of the Set-animal figures resemble a jackal (excepting in the vertical tail). M. Daressy cites a singular passage from the Harris Magic Papyrus: "The boars, to worship thee, have assumed the bodies of jackals." Set once governed Upper Egypt and appears as totem for one, if not more, of its Pharaohs, as the Set-animal; but on the Palermo Stele as symbol of one Pharaoh, this composite creature is replaced by a boar as the king's *nubti* symbol.

M. Daressy does not include the Set statuettes in his study, which should be done. One in the Hilton Price Collection was published in the *Proceedings of the Society of Biblical Archaeology* about sixteen years ago, which renders the head and prehensile snout—something like that of the South American tapir—very realistically.

The remainder of the *Bulletin* is taken up by M. Henri Munier's long article upon "Une Relation Copte Sahidique de la Vie de Saints Maxime et Domice." He gives the whole Coptic text with translation of a new-found manuscript from the Hamouli Monastery. Whilst deserving full praise for his erudition and the time and labour expended, it may be ventured to suggest it seems a pity to go to so much expense to publish such a worthless production. The rubbish of the alleged adventures and miracles of these pseudo saints is quite unworthy of reproduction. Moreover, a Bohairic version has been published by M. Amélineau, and Syriac and Arabic recensions are known. It may be presumed such a work would not be composed and inscribed unless the pious would purchase and peruse it, and therefore it throws a curious light upon the mentality of Egyptian Christianity at the time such a story was produced.

In the *American Journal of Archaeology*, 1916, pp. 175-200, Prof. A. L. Frothingham publishes an article entitled "Hermes, Snake-God, Caduceus," which will be of value for the tracing back to an Asiatic ancestry of some elements of

Hellenic mythology. The greater part of the essay is devoted to proving by reproduction of the figures upon cylinder-seals and other relics of Mesopotamian and Hittite art, the origin of the Caduceus symbol among the Babylonian, Assyrian, and Hittite races. Also, at a later period, of the Babylonian deity who for a time embodied the ideas connected with the duplicate serpents which formed the Caduceus. These dual serpents, male and female, were undoubtedly significant of fecundity, and therefore were used as emblems in association with a nude goddess and a god depicted at times with ithyphallic character, and trees and plants emblematic of prolific vegetation.

The basis of these ideas is the origin of life—as illustrated by what Prof. Frothingham terms the *connubium* of these two deities, representing the vivifying solar heat—and the soil and moisture and their union, at seedtime, producing harvest. The deity, the animal, and the vegetable figures in the groups exemplify this, especially upon a fragment of Phœnician pottery found in Spain. For the ingenious and erudite manner in which the matter is discussed our readers should consult the article referred to. It is alluded to here because Prof. Frothingham does not treat upon the Egyptian iconography of his subject of the Caduceus, for this same symbol, although not frequently employed, was known to, and depicted by, the ancient Egyptians from very early times. Whether they adopted it from Asiatic sources, or it was a symbol of concepts evolved by the Egyptians themselves, we cannot yet decide.

The representation of a single serpent, or of two separate ones, by Egyptian artists on the other hand, was quite common.

An early example of combined serpents is on a cylinder of the Hyksos king Khyan of the XVth dynasty, which is preserved in the Athens Museum.

Another specimen of the group may be seen in the Egyptian Collection at University College, London; see the last number, p. 33.

Prof. Frothingham shows a Babylonian group of a deity grasping two serpents, which is a very similar attitude to that of Horus in the scenes wherein that deity is depicted standing upon crocodiles and holding scorpions, and sometimes animals as well as snakes. These images are always supposed, however, to be solely concerned with the god's protective power against the bites of animals and reptiles.

In the recent volume of the *Bulletin Correspondance Hellénique*, M. Gustave Blum has an article upon "Princes Helléniques," which concerns the portraiture of two of the Lagides: Ptolemy IV, Philopator, and Ptolemy VI, Philometor. It is illustrated by admirable photogravures of gems and coins, and provides perfect representations of the physiognomy of these two princes. For the first, the finest portrait is that upon a cameo in the Cabinet des Médailles, which M. Babelon published as a figure of Harpocrates. A comparison of the bust depicted on the gem with a coin of Philopator preserved at The Hague, and another in the Lobbecke Collection, leaves no doubt but that all three represent the same personage. Moreover, the head upon the cameo bears the double crown of Upper and Lower Egypt. The face is youthful, because Philopator ascended the throne when only twenty-two years of age. The king's portrait being, on the cameo, so Egyptianised as to be considered an Harpocrates, is an interesting comment upon the fact that he was the first of the Ptolemies to be crowned at Memphis according to the Ancient Egyptian rites for such a royal function.

For Ptolemy Philometor M. Blum produces two busts upon gold rings in the Louvre Collection. One of these shows the king with the Egyptian double crown,

the other with the arrangement of the hair of a Greek Basileus. M. Blum suggests that these two intaglios, which were found together, belonged to some official who used them as signets upon the same occasions—the Egyptianised figure for sealing Demotic documents, and the Hellenic one for that of their duplicate Greek counterparts. The phototypes of the rings are placed alongside two others of Philometor's coins which completely justify M. Blum's attribution. The face of the second monarch bears very slight resemblance to that of his ancestor Philopator.

For other Ptolemaic portraits see *ANCIENT EGYPT*, 1916, p. 95.

In M. Dussaud's new *Catalogue of Les Monuments Palestiniens et Judaïques* in the Louvre, he gives heliogravures of three steles from Tel el-Yahudiye, in the Delta, bearing Greek epitaphs, which were obtained a few years ago by M. Seymour de Ricci. One of these reads:—

"In the year 7, the 7th of Phamenoth, Sabbataios, son of Somoelos, died, too early, age about 25 years."

This, like the other inscriptions, is a record of a Jew, and so confirms the existence of the Jewish colony at this place, Onion. The name is identical with that in another Jewish epitaph recently recovered near Heliopolis. It is a title similar to that of personages mentioned in Nehemiah viii, 7, Esdras ix, 48, and elsewhere, but it also is to be found concerning a member of the citizens of Nippur, probably a Jew in the time of Artaxerxes or Darius II, for Prof. Hilprecht, in his "Business Documents of Murashu Sons," gives a name written in cuneiform as Sabbataai. In the Tel el-Yahudiye text, Somoelos is intended, doubtless, for Samouelos.

Another epitaph is of "Elazaros, the good, beloved of all, aged 30 years, the 2nd year of Caesar, 20th of Mehit." This would be 28 B.C.

The third text is of a "John, son of John," and is undated. The Sabbataios year is almost certainly of Augustus, like that of Elazaros, and so will be 23 B.C.

M. Naville, when excavating at the same site, found inscriptions of Jewish residents. In one of these the person was named Eleazar; another was "Mikkos, the son of Nethaneus" (Micah, son of Nethaniah). Other names were Barchias and Salamis, or Salome Barchias. Barachiah's death is dated in the 35th year which could only apply to the prolonged reign of Augustus. It is interesting to note that among the Jews presumably dwelling in Egypt, who were on the Committee of the Septuagint translation, two were named Sabbataios and one Eleazar.

The Committee for the Preservation of the Arabic Monuments of Egypt, which is closely connected also with the administration of the Arabic Art Museum in the Sharia Mehemet 'Ali in Cairo, has for some time been carrying on excavations in some of the large mounds behind what is called "Old Cairo." These mounds cover the remains of the mediaeval early Mohammedan town of Postat, which was laid out on a town-planning scheme copying the arrangement of the tents of the Amirs and Sheikhs which formed the great camp when the Arab invaders besieged the Roman and Byzantine Babylon.

The discoveries of pottery, most of it fragmentary, have been very considerable; also a number of funerary Arabic inscriptions have come to light, but not any monuments or architectural remains of importance. The finds of manuscripts, however, have been very numerous—papyri, parchment and paper being all

represented—and some two thousand pieces, of more or less value, have already been collected. They are almost all of the age of the Arabic dominion, and mostly what may be termed domestic documents, such as reports of commissions for transporting agricultural produce, records of mercantile transactions, revenue disputes and such like. One manuscript, in perfect preservation, concerns the giving of freedom to a slave. This is of the eleventh century.

The whole Collection, which is likely to be much augmented in the immediate future, will be stored in the Museum of Arab Art, and will make Cairo to be a centre for studying records of the early eras of the Mohammedan rule in Egypt.

JOSEPH OFFORD.

JOURNALS.

Recueil de Travaux relatifs a la Philologie et l'Archéologie égyptiennes et assyriennes. Vol. XXXVII, 1916. Liv. 3-4.

[The first half of this volume was noticed in ANCIENT EGYPT, 1915, p. 183.]

JEQUIER, G.—*La tête de panthère.* This is the *peh* hieroglyph usually called the lion's head. In the Pyramid Texts the king takes the insignia of the panther skin, long staff, and sceptre *aba*. The panther skin is named *ba*, and so is the panther *ba*, or *aly*. Among the variants of this name the head occurs as a hieroglyph, showing that it has the value *ba*. The long neck also agrees with the panther and not with the lion. Among the offerings in early mastabas is *ba res*, along with clothing; this therefore refers to the "panther of the South," well known in later inscriptions. The author does not explain how and when the value *peh* arose.



BES, SHOWING SKIN WORN ON BACK.
FASTENED BY GIRDLE.

Wood. University College.

Nature et origine du dieu Bes. A general opinion that Bes was a leopard rests on an error of reading at Beni Hasan, where *ba res* has been read as one word, *basu*. Pleyte supposed that a panther-headed god in Chapter CXLV of the Book of the Dead was Bes, but there is no name to it, and thus no connection with Bes. The figures of Bes on the ivory wands of the Middle Kingdom and the furniture of the Empire, are all entirely human except the head, and an animal tail. In the later times the figures became more complex, owing to the symbols of other divinities being added, such as the plumes of Onqet, a triangular harp, shield and sword. All accord with Bes being a negro dancer, as African dances are usually with arms and the panther's skin

worn by the greatest warriors. The Metternich Stele and other instances show that the head of Bes is a mask, placed separately over the head of Horus.

Thouéris. This was a kind of protecting genius, known by appellations, such as *Ta-urt*, the great, *Rert*, *Apt*, or *Sheput*. This genius, like Bes, had no regular

worship as other Egyptian divinities had, and this peculiar position connects the two. The figure, though based on the hippopotamus type, is not, like other animal gods, a true copy; the head is not true, the paws are leonine, the breasts are human, the back is a crocodile's. As Bes is a dancer in animal dress, so probably Taurt is similarly a woman with animal attributes. The conclusion is that they were not divinities, but magicians in animal dresses employed in ceremonies for the benefit of children. Both came from the Upper Nile or Central Africa.

A propos d'un tableau funéraire. On one of the Gebeleyn sarcophagi of the Middle Kingdom is a scene of the dead man lying on a bier, two women mourners, one at the head the other at the feet, and a smaller figure of a woman in the air, looking toward, and parallel to, the dead. Steindorff looks on the mourners as the usual funeral mourners. Wiedemann looks on the upper figure of a woman as that







POTTERY COUCH AND FIGURE.
Early XVIIIth dynasty. University College.

of one destined to be buried with the dead. After disposing of some mistaken analogies, the author turns to the female statuettes often found in graves of the XIIth-XVIIIth dynasties. He states that they have nothing Egyptian, at least in their origin. There are two classes of these figures, one rudely made in pottery, with very long limbs, evidently not Egyptian, and the other, in limestone, well proportioned, but with legs ending at the knees. The latter are attributed to the Empire. There is also another category, not mentioned by M. Jéquier, of finely made red pottery figures of the thin graceful type, full length, and associated with double couches in pottery, manifestly as wives of the dead. These are of the XVIIIth-XVIIIth dynasties. It should also be noted that the second category above is found certainly in the XIIth dynasty, made in blue pottery and in wood.

The source of figures described by M. Jéquier is distinguished by him from the Babylonian mother-goddess figures, and they are unlike the Greek island figures. He suggests therefore Syria as a source for the idea. He discusses the analogy to the Saïte figures of a female on a couch, but considers that the resemblance may be accidental. Some of the earliest class, the rude grey pottery figures, have an infant on the back. He concludes that as these figures are foreign and have no place in the ritual, therefore there is no ground for comparing them with the representation from Gebeleyn. He then connects that scene with the figure of the *ba* hovering over the mummy; and the two mourners with those who personified Bes and Nebhat. The only difficulty is that the figure is feminine over a bearded mummy, while the *ba* is always masculine.

With regard to the pottery figures they may very well originate in Syria as M. Jéquier suggests. They certainly are as early as the XIIIth dynasty, and the fall of the VIth dynasty was associated with a Syro-Mesopotamian invasion. The use of soul-houses, with slave figures and furniture, also belongs to the same age, and is analogous to the pottery figures for the dead.


LACAU, P.—*Textes Religieux*. This is an arrangement in parallel lines of the texts of four sarcophagi from El-Bersheh, principally of value for research in equivalent signs and readings.


MASPERO, G.—*Une transcription en . . . ṽḍẉas du nom de* . The rendering of the god  ¹¹  by *Μαρδοῦλαι* points to Osymandyas being a real equivalent to User-ma-ra,  becoming *ṽḍ* in certain cases in Upper Egypt.

MASPERO, G.—*Introduction à l'étude de la phonétique Égyptienne*. This paper of 55 pages is part of the foundation of a wide grammatical study of the Egyptian language, which would have been one of the greatest works of this master. How far it may have been written is not yet known. We hope everything available will be given to the public. As a study by the most sympathetic interpreter of Egyptian ideas, singularly free from theory, it would probably reach nearer to the usages, varying in time and region and gradually unifying into rules, than any positive system. In every way it was needed as a counterpoise to the self-sufficient, mechanical, ultra-Semitic school of Berlin. In the Introduction the master says, that although much has been published on grammar in France, England, Italy and Germany, "I think that we do not yet know enough to succeed," so he will only write an Introduction to the study of the grammar. "We have had the chance to find a clear field as to language at the beginning of our science, and we have attacked the decipherment without the encumbrance of preconceived theories or established paradigms; shall we not better profit by the absolute liberty with which fortune has favoured us, by creating a grammar of Egyptian which will not be inspired solely by classical models, or Indo-European, or Semitic, but which springs entirely from an analysis of the texts, aided by all the means that philology can lend us, to whatever kind of language it is applied?"




The historical scope of the enquiry is limited to the period from the XVIIIth dynasty to the present time. [This no doubt will be anathema to those who join their conclusions entirely to the theoretic beginnings shown by the most primitive texts. We must avoid a confusion of ideas. Will future students of English deal best with our literature by insisting on the earliest Teutonic or Gothic values applied


to our present writings, or by beginning with the Elizabethan? The primitive stages of a language are of the utmost value; but they are quite unfit to be the arbitrary standard for its developed style.] The order in which the sounds are studied is labials, dentals, gutturals, and sibilants.

□, . At the XVIIIth dynasty this is both *p* and *ph*, and by Saite examples it was probably *p* in South, and also in North when unaccentuated, but otherwise *ph*. Under Arab influence it has become *b* in Southern Coptic, but remains *ph* in the North.

In the geographical lists, from the XVIIIth-XXIInd dynasties, it is equal to the Hebrew *pe*. In some cases as in *kafr*, the *pe* is rendered , although the *pe* usually is rendered *ph* in translation. In cuneiform from the XVIIIth to XXVth dynasties it is always equal to *p*.

The Greek values give some light on the varying values. At Memphis, Herodotos renders the sound *ph*; at Thebes, Hekataios got the sound as *p*. Both forms are found in Ptolemaic Greek transcriptions, and also *b* as in Boubastis, Bouto, Anubis. In Coptic, *p* is southern and *ph* northern, both merging into *b* in late times. All these results are reached by the large number of examples quoted in the paper; here only the barest summary can be given.



|| . Probably the double sign ||  or ||  is the full *b*, while the single sign is *v*, which probably weakened to *w*. In Arabic times the *b* passed into *v*. In Hebrew, the *beth* is always rendered thus. In cuneiform it is always *b*, and also in Herodotos. In later times it passed to the digamma, or was entirely lost, as in Pouasti for Bubastis, Harmais for Heremheb, and Soukhos for Sebek. It became confused sometimes with *m* as Meroe for *Berna*, Pakhnoubis and Pakhnoumis. In Roman names it is regularly equal to *b*. The transition to *v* was common in Coptic. We know of the use of *b* for *v* usually in late Latin.




 had always a single sound, between *p* and *b*. It is used for an aspirated *pe*, Hebrew, as in *kafr*. Cuneiform not having *f*, rendered it by *p*. The Greeks rendered it by *phi*, and at the end of names by *beta*. In Ptolemaic it is always *phi*. In Coptic it is *f*, and in Arabic *fe*.






The four dentals probably cover seven or eight different sounds, according to period.


△. This was usually rendered *t* in cuneiform, rarely *d*. In Hebrew it was equal to *tau*, and rarely to *teth*. In the Saite Age it was in Greek rendered *tau*, but before an aspirate it became *theta*.

The *ta* land sign is sometimes used for *delta*, and *t* or *nt* for Latin *d*. The late Greek *theta*, pronounced almost as *t*, was also rendered by △. In Coptic it became confounded with *theta* and *delta* sounds, the latter written with *t*. The true *t* only remained in final letters.











≡, originally *th*. This early became equal to △ on the one hand, or on the other  or . The Hebrew *tau* is rendered by both ≡ and △. Brugsch gave many examples of ≡ becoming *cad* or *shin*. These are examined in detail, and reduced to the conclusions that it was never *cad*, and that in Saite to Roman times it was usually a variant of △, but sometimes kept its early hissing sound, and then became *z* = *janja* = *sigma*.








 is rendered *z* in cuneiform, and used for Hebrew *tsade*. At the same time it became confounded with  and .











Originally in the XVIIIth dynasty this was *ts* or *ch* as in *child*. In late times *ts* passed into *delta* and *theta*, and further into *tau*, *signa*, and *janja*. In the geographical lists  and  are usual for *tsade*, more rarely for *zain*; and in cuneiform *tsade*. The  in Old Kingdom words appears in the Middle Kingdom and Empire as , and further passes into , and this transition is also shown by cuneiform equivalents. The change into *d* and *t* was more rapid in Ptolemaic and complete in Roman times, while in Coptic it passes into *janja* mainly in the North but *g* in the South.

. In the XVIIIth dynasty the equivalent is *daleth*. It does not happen to occur in early cuneiform, but in the XXVth dynasty it is rendered by *teth*. Aramean continues to use *teth*. Later the plain value *tan* arrives. In Ptolemaic names it is generally used for Greek *tau*. In Roman names it is *d* or *t* equally.

Gutturals and Aspirates.

, and the vocalised variant , covered two values in the XVIIIth dynasty, both *k* and hard *g*. In the geographical lists it is used for *kaph* and also for *gimel*. *Gimel* appears to have become hardened, and then  was used for it. The early cuneiform renders  and  by *ku*, or sometimes *gu*. Under Sheshenq the  continues as *kaph* and sometimes *gimel*. In the XXVth dynasty the cuneiform uses *ku*, or sometimes emphasises it as *uk-ku*. In Greek, *kappa* was usual, but *khi* appears owing to the variable usage in Ionic. In Ptolemaic both equivalents were used, but *khi* regularly for  in royal names. From the Saïte Age, perhaps from the XVIIIth dynasty, there were two sounds for  the southern *k* the northern *kh*, both of which passed into Coptic. The fixed system of hieroglyphs prevents changes being apparent, much as the fixed spelling of English hides phonetic change now; but the variants of  changing with  shows how far the unwritten modifications had gone.

 was probably very close to *qoph* and *kappa* originally. In the geographical lists it is usually the rendering of *qoph*, but occasionally of *gimel*. The cuneiform of the XXVth dynasty always renders it as *q*. The Greek varies between *k*, *g*, and *kh*. In the Ptolemaic words complete confusion is seen between , , and , though each was continued generally in the words where first used. In Roman spelling all were interchanged. In Coptic, owing to  being reduced to , it became *k*, which normally passed to *kh* in the northern dialect.  also became *g* in both North and South, and as such it also passed into the equivalent *janja*.

 seems to have included two sounds originally, the usual hard *g* and a guttural *g* as in German *Tag* or Arabic *ghayn*. By the first value it was confounded with , and by the second with . The geographical lists express *gimel* usually by , less often by ; but  is used where the Arabic form has passed into *ghayn*, as for Gaza. [This suggests that the real local pronunciation has been only approximated by Hebrew and other writing.] This special sound was rendered in cuneiform by *kh*. It seems that  was used for a guttural like *ghayn*, usual among the Rutennu, who perhaps were non-Semitic. But it is rare in the South Syrian names. In the lists of Sheshenq it is usual for *gimel*. In Ptolemaic and Roman use , , and , were used indifferently. In Coptic the southern equivalent is *shima*, while the northern is *janja*.

𐀀. In geographical lists this is used for Semitic *he*. In cuneiform, having no *he*, the *heth* is used instead; in its stronger form equal to the Arabic *ḥa*. In the XXVth dynasty the only instance of 𐀀 is either ignored or represented by a lengthened vowel. The Greek uses a simple vowel, *a*, *e*, or *i*, at the beginning of words. In the Ptolemaic writing the Egyptians used 𐀀 as an auxiliary to *p*, *t*, and *k* to equate with the Greek *ph*, *th*, and *kh*. They also used it for the Greek initial aspirate. It always was kept distinct from 𐀁, even in late hieroglyphs. In Coptic it always corresponds with *h*.

𐀁 was a strong *h* like *heth*, or *ha* in Arabic; but it approximated so much to 𐀀 that when the Coptic alphabet was started one sign sufficed for both. In the geographical lists it is always the rendering of *heth*. In early cuneiform it is the same, and continued in the XXVth dynasty and in the Aramean. The Greeks in beginning words used the hard or soft breathing, or omitted it entirely in the middle of words. [This shows that it weakened to the value of 𐀀.] Rarely it is represented by *khi*. In Ptolemaic the same treatment continues, but where it is preceded by the article it coalesces to form *phi* or *theta*. In the demotic an actual inversion takes place, and the Greek aspirate is rendered by 𐀀.

𐀂 and 𐀃. As early as the Pyramid Texts 𐀂 was interchanging with 𐀃 commonly; yet in Coptic it only occasionally becomes *sh*. The primitive value of 𐀂 appears to have been between *sh* and *kh*, much like the German soft *sch* in *ich*. The value of 𐀃 is more the hard *kh*, as in German *buch* or the Spanish *j* as in *Jeres*.

In the geographical lists 𐀂 is never used; but 𐀃 and 𐀄 are frequent as equivalents of *heth*. In early cuneiform, *kh* is used for 𐀃 as well as for 𐀀 and 𐀁; and in the list of Sheshenq *heth* is rendered by 𐀄, 𐀂, and 𐀁, but never by 𐀃, 𐀄, or 𐀂. In the XXVth dynasty *kh* is used as before. Apparently, all the aspirates were softening then into one weak form, and 𐀃 was becoming 𐀂. It remained as *kh*, however, in the royal names in Herodotos. But in Ptolemaic it becomes *x*, as in Manetho. The discussion of the Coptic forms of *h* and *kh* is complex, and does not reflect upon the earlier language.

Sibilants.

𐀅 and 𐀆, though partly distinct in Pyramid Texts, yet interchange there to some extent. By the XIIth dynasty there was no difference except in the convenience of grouping the signs. In the XVIIIth dynasty there is only pure convention. The united 𐀅 and 𐀆 are used for both *śad* and *śin*; on the other hand the early cuneiform renders them by *śin*, as also in the XXVth dynasty in most cases. In all Greek and Coptic renderings these are *s* only.

𐀇. The sound of this and the syllabics 𐀈, 𐀉, was as the *śh* in *fresh*, or *shield*, the *śin* of Hebrew and Canaanite in the names of the lists, and in the cuneiform, though occasionally rendered by *śin*. In Greek it was rendered *s*. In late Greek the *śin* was rendered *sz*.

Vol. XXXVIII, Livraisons 1-2.

Vowels properly so called.

The first stage is to discriminate the real values in Coptic. *Alfa* has two values, *a* as in Antioch, *aw* as in war, water. This appears clearly in spelling Morkos for Markos; but at the start of Coptic it is always the same as *alpha*. The long *ā* of the XVIIIth dynasty may become *a* or *ou* in the XXVth or Greek. The short *ā* may become *ē* or *i*. The general course is that *ā* becomes *ou*; *ā* remains *ā*, but may become *ō*; *a*, unaccented, changes to *e*.

Ei is always sounded *a* in present Coptic; *alpha* and *epsilon* in Greek both pass into *ei* Coptic.

Yoda is written *ei* initially. It comes probably from *e*, and that earlier from *ā* or even *ā*.











Long or short *e*, *ē* or *ō*, *ou* or *au* are indifferently *ou* or *au* in present Coptic. In the early Greek and in the XXVth dynasty Assyrian it varies as *ou*, *e*, or *ō*.

He or *hu*, in North Coptic *hē* or *hū*, is an early Coptic variation of *u*. Though the *upsilon* in Archaic Greek was *eu*, yet it was early shortened to *i*, as it is now.


The diphthongs and double vowels in Coptic are fully discussed, but they do not lead to conclusions on earlier vocalisation. It is concluded that a variation of probably eighteen or twenty vowel sounds in the XIXth dynasty have become reduced to ten in the Coptic.

Signs corresponding to Egyptian Vowel sounds.

This section deals with the changes back to the XVIIIth dynasty. We must clearly distinguish between *sound* changes and *sign* changes. For instance, in English, *a* represents half-a-dozen sounds, which have nothing in common with its Anglo-Saxon or Low-German value. Yet *a* is not a "vague vowel" or a "feeble consonant."

First will be studied . The signs  and  will be treated later as sonants.  and  are only vocalised duals.  is a cursive form of . In late writing  is substituted for  as determinative of the word . A long history is given of the views of Champollion and later writers.

The use of vowel signs has nothing to do with race, or the origin of a language. In Malagasy or Javan the Arabic alphabet is used, regardless of the nature of the speech. The Hellenes used the Phoenician alphabet, and the Achaians used the Cypriote syllabary. The Canaanite, Babylonian and Assyrian languages were all Semitic, and yet used a cuneiform syllabary which did not confound vowel values, but used separate signs for each vocal syllable. Therefore the question of the presence or absence of true vowel signs in Egyptian is quite distinct from the other question of a Semitic connection of the language.

The late changes of a vowel are no evidence that such variation was original. The Latin *a* has passed into *ā* in *Paris*, *ā* in *Parisi*, *ē* in *pere*, *ai* in *main*, *ie* in *chien*, *au* or the sound *ō* in *chaud*, should we therefore say that in Cicero's time *a* was a "feeble consonant" or a "vague vowel"? No more true is it to assert this of  because of its varying descent in late forms and in Coptic.


"For me, as for Naville, for Golénischeff, for all those who refuse to admit the imperative affirmations of the Berlin school, Egyptian has possessed original vowel

signs of the same nature as the modern; but as its graphic system was almost entirely fixed at an early date, while the spoken language followed its own course, the written language has obstinately preserved its forms; and the vowel signs—for the reasons we have noticed—have taken, historically, various values which do not always seem to belong to the primitive value." "We can go back by degrees to the XVIIIth dynasty, through Coptic, Greek, Assyrian and Canaanish transcriptions, but beyond that we have nothing but hypotheses, more or less strongly influenced."

[We might remark, also, that we know nothing of the grammar or sounds of Western Semitic before the XVIIIth dynasty, except by theory and deductions projected back from that Age. To extend such theorising back thousands of years before the earliest facts known to us, and then to force Egyptian of the 1st dynasty to fit the theories which have been constructed, is a process which seems bound to produce fallacies. The continuation of the above article only begins the subject of *Q*, it will therefore be summarised along with the future continuation.]

SOTTAS, HENRI.—*Une petite horloge astronomique Gréco-Égyptienne.*

KUENTZ, CHARLES.—*Note sur un gnomon portatif Gréco-Égyptienne.*—These two articles deal with the small dial published by M. Clédat. They explain at great length (18 pp.) what has been already stated in half-a-dozen lines in *ANCIENT EGYPT*, 1915, p. 184. We read: "Cet instrument est sans doute déconcertant de prime abord, car la forme qu'il présente n'a jamais été jusqu'ici rencontrée autant que je sache." Yet in 1894 such a dial was sold in the Hoffman sale in Paris, Lot 456, and fully described and illustrated in the catalogue; also a similar dial has been for many years on view at University College. It is, therefore, well-known to many persons. It is assumed by the writers that the gnomon must have been a solid rising from a base to an edge or a point. This is not necessary; any point fixed in space to cast the shadow would suffice; and as the dial at University College has a socket on the top, it seems likely that a statuette upon it held a spear, or some object, forward to cast the shadow. As the dial is quite independent of direction, and only needs to be levelled, a single point could cast a shadow on any of the month lines.

The fresh idea here lies in a suggestion by M. Loret, that the hieroglyph  is such a dial as this, with a block gnomon and a plummet hanging from it to level it.

MASPERO, G.—*Quelques divinités dans les arbres.* Besides the Osiris enclosed in a tree trunk, there are other tree deities. On the shrine of Saft is a "Hathor in the *nebs*" or *zyzypus*, different to the Hathor of Memphis, "lady of the *nehet*"; also a Heremakhti lodged in his tree; a Shu; the two lions of Heliopolis, Shu and Tefnut, in a chapel hidden by a tree. The *nebs* also gave its name to Pnubs, or Dakkeh in Nubia, where Tehuti was worshipped; moreover in Pap. Sall. I, Tehuti is a species of palm. [There was also a palm-goddess in Roman times found figured on terracotta images.]

DARESSY, G.—*La classement des rois de la famille des Bubastites.* In this article the conclusions of M. Gauthier on this complex subject are discussed. The difficulties arise largely from the same name being repeated in different generations with small differences; also from the isolated nature of the facts, without any

original document of an extended period; and further from there being concurrent lines of descent in the Thebaid and the Delta. The complication has now reached a fresh stage by M. Daressy claiming as obvious no less than three confusions of different names by the scribes. With three errors assumed, a great deal can be done in fitting any system. It looks as if the matter is insoluble without some further documents to decide points. The most promising treatment would be to write out each document on a separate paper, to the same scale of generations, and without any assumptions or completions of cartouches, and then try to fit the isolated scraps into order. In the present state of the subject it does not seem of use to try to give an abstract.

MASPERO, G.—*Hérodote, II, 150*. This legend that the Fayum lake discharged into the Syrtis of Libya, underground, is parallel to present beliefs. There is a village four miles south of Philae, on the west bank, at the foot of Gebel Shemt el-Wah, called Nazlet Shemt el-Wah, where it is said that a subterranean branch of the Nile runs to the Oasis of Dush. In that oasis, near the spring, the people showed—about ten years ago—pieces of a boat, with an anchor, and said that they had come through underground from the Nile, and that they had also received other wrecks from the Nile by that way.

CLÉDAT, JEAN.—*Nécropole de Qantareh*. This is an account of excavations in a cemetery extending east of Qantareh, up to the ruins of a town two miles eastward at the north end of Lake Balah. This town is claimed as being Zaru, but no evidence is given for this identification, though it seems likely enough. An obelisk is marked as existing there before the Canal, and two sphinxes are reported there thirty years ago; but no trace of these can be found at present. Seven pages are given to describing the cemetery and groups of tombs; but whether the ushabtis are of the relief style with back pillar (XXVI–XXX) or only painted (before XXV) is never stated, nor is there a single drawing of the vases or other objects found; the account is therefore of no archaeological value. In a few tombs amulets were found, but the materials are not stated. From scanty remarks indicating the period, these seem to be about the XXXth dynasty and early Ptolemaic Age.

MASPERO, G.—*Sur le sens juridique de Ξ* . This paper re-states the interpretation of *māh-kheru* as a legal term, a position assumed to be new in Dr. Gardiner's *Tomb of Amenemhat*. "On oublie si vite en égyptologie ce qu'on a lu, et, pour peu que l'écrit soit ancien, on néglige si résolument de le lire, que ce sera une surprise pour tout le monde et pour M. Gardiner lui-même d'apprendre que j'avais eu la même idée que c'est une de celles qui ont déterminé mon interprétation, et que je l'avais indiquée, il y a plus d'un quart de siècle, dans un mémoire *Sur l'expression Makhroun*, qui, composé en 1880, ne fut, par accident, publié qu'en 1892." Sir Gaston's position is, that though meaning "with the right intonation," the truth of voice was a necessary part of the legal justification. All ancient laws were mixed in a kind of ritual—what referred to property and what referred to sacrifices or to the dead. A passage in Aelian implies that the old laws were rhythmic, and Aristotle says that they were chanted before they were written; hence called *nomoi* in Greek and *carmina* in Latin. Such a chant was not complex, but like the Oriental recitations. A just voice was needed therefore, and an exact wording for a legal formula. [We have likewise the "patter" of an old formula embodied in

the marriage service, "to have and to hold from this day forth, for better for worse, for richer for poorer," etc.] Hence the view that the truth of voice, or exact knowledge of the magic patter was necessary to avoid embarrassments in the future life, and he who knew the right jargon completely was thereby justified by his true voice. To be "true of voice against his enemies," meant that he had the right sing-song to subdue them. [This is like a Norse ceremony: "Then Kotkell had a great spell-working scaffold made, and they all went up on to it, and they sang hard twisted songs that were enchantments. And presently a great tempest arose. Thord . . . continued out at sea as he was, soon knew that the storm was raised against him." (*Laxdale Saga*, XXXV). Here doubtless the "true voice" was as essential to the spell to overcome the enemy as it was in Egypt.]



CHASSINAT, ÉMILE.—*La mise à mort rituelle d'Apis*. This opens with the passages from Pliny, Ammianus, and Solinus, stating that the Apis bull was drowned after a term of years. Plutarch states that the term of years was 25. Two Apis bulls are stated to have exceeded this. One is stated to have lived 26 years; another was born in the 11th year and died in the 37th year of Sheshenq IV. [Either of these might have only just exceeded 25 years, and if the drowning was at high Nile, the few weeks or months over 25 years would be within the rule.]

It seems established that the Apis was Horus during his life; see "The majesty of Apis went to heaven, it is Horus who became Osiris," and other such references. Apis was also assimilated with Atmu, with Ptah, and with the Nile. He became Osiris after his death. The conclusion is reached that Apis was originally a Nile-god.

The title part of the paper is reached after twenty pages of the previous dissertation. It depends on the statement that Apis and also the Hathor cow "went to *Qebhu*, his spirit mounted to heaven and joined itself to Ra." *Qebhu* is the cataract region, also the name of a sacred lake or well at Letopolis, Heliopolis, Edfu, and near the Apis temple at Memphis. Naturally, all such places were cool or refreshing. On the strength of this, stated in ten pages, it is proposed that the bulls were drowned. Yet the last quotation of all, that Sety I "went to *Qebhu*, joined the sky, and was united to Ra," cannot mean that Sety was drowned; and, if it describes the natural death of the king, why not of the bull also?

LORET, VICTOR.—*Le titre* . This paper largely quotes passages illustrating the sense of the first three subjects, horned cattle, hoofed cattle (as asses) and birds, which all are agreed upon. The really original point is that the last sign occurs in  (Pap. Berlin 3027) and similar in Pap. Nebeni. Hence the reading of  is *neshem*, a fish scale, and the sense of the whole title is overseer of cattle and ungulates, birds and fishes.

BLACKMAN, AYLWARD M.—*On the reading of*  *as "nyswt."*

GARDINER, ALAN H.—*Additional Note*. These notes refer to the *nyswt* reading as supported by a play on words of *nyswt* parallel to *nyswt*; and, above all, by the coffin text, in which  is replaced by  (Lacau, in *Recueil*, XXXV, 228.)

REVIEWS.

Ancient Times: A History of the Early World.—By JAMES HENRY BREASTED. Sm. 8vo, 731 pp., 8 coloured plates, 276 figures, 38 maps. 1'50 dollars. 1916. (Ginn.)

The author, whose great services to Egyptian literature are so well known, has here put all teachers of history in his debt by writing what has long been wanted—a history of civilisation. To compress all the course of events before Charlemagne into a pocket volume, and give a connected view of the whole human movement, is a feat of skilful omission of detail: much that we know—sometimes with a painful familiarity—has disappeared. In its stead we have a broad view of the general character of each age, its growth from the past, and its relation to the future.

The pre-classical world, Greece and Rome, have equal shares of attention. The mere political events are subordinated to the larger questions of the nature and outlook of the civilisation: why in each age men thought as they did, how they were conditioned, what their capacities were, how they met the changes in the world. A fore-runner in such a treatment is Mrs. Armitage's *Childhood of the English Nation*, a history of motive and immediate reality.

Our concern here is more with the section on Egypt, which fills sixty-five pages. Only nine names of kings occur in the whole. The Hyksos are never mentioned, which is as well, for there is no room for them in the Berlin chronology used in this book. It is rather hard on the unsuspecting reader not to have the slightest hint that the Egyptians recorded their dynasties as beginning over two thousand years before Berlin allows of their existence. Less than one page deals with the long pre-historic ages and the rise of the civilisation. Six pages describe the rise of hieroglyphs. Four pages are given to the calendar and other pre-pyramid knowledge. All this part seems meagre for describing one of the growths of civilisation which is best known in its details. Twenty-five pages describe the greatest period, that of the Old Kingdom, well illustrated and vividly treated. It is unhappy to find put here glassware of the XXVIth dynasty and a house restoration of the XVIIIth. Then come six pages on the Middle Kingdom, where some of the scenes of Beni Hasan, instead of an XVIIIth dynasty papyrus, would have been an improvement. The Empire has twelve pages and six of the plates. Three pages on the later ages, and three more on the writing, complete the account. Of the nine pages given to the mode of writing we would gladly give up most in exchange for some of the literature which the author has at his fingers' ends, and an account of the growth of the arts through the prehistoric ages. As an outline of the successive civilisations of Egypt, this account is a successful and original piece of work. We may note on p. 54 that deep graves did not precede the discovery of metals; also one pyramid figured never existed, as there is none known between the coated step pyramid of Sneferu and the greatest pyramid, of Khufu. The description of a step pyramid as "made by placing a series of tombs one above another" should be amended, as there is only one tomb, and the series is of successive coatings around it. The German fallacy of figuring palms around the temple of Khafra is copied; in reality that ground was far above the level of vegetation in the early time. A misprint in fig. 72 needs notice.

A special feature is the fulness of the series of maps, designed on purpose to show the stages of political power of each country, and mostly original, though the early state of Sumer and Akkad has been lifted unacknowledged from Prof. King. It is much to be hoped that this book, with, perhaps, a little redistribution of subject, and replacing English for American comparisons, may come into use for historical teaching in Britain.

The Oxyrhynchus Papyri, Part XII.—By B. P. GRENFELL and A. S. HUNT. 1916. (Egypt Exploration Fund.)

Another welcome instalment from our two scholars, who maintain the credit of England as the foremost country in this subject. This volume is unusually full of interest on social history, the heads of which we notice here in order to direct readers to the material.

It opens with a harsh illustration of the severity of the claims for public service. A man was appointed tax-gatherer for a village, and rather than face the trouble and obloquy, with the probability of ruin, he preferred honourable ruin to begin with, and renounced all his property to the emperor. The next step was the Imperial appointment of the man who originally proposed the renounced tax-gatherer, giving him the property and requiring him to do the duty. It seems as if thus the duty could be pushed through several hands, accumulating property by ruining the men as it proceeded, until at last there were enough confiscated estates attached to the duty to make it pay someone to do it. This shows the terrible economic state of Egypt, that as early as A.D. 201 the public claims could ruin an innocent man by being thrust upon him.

Home rule in Egypt is illustrated by a decree of Caracalla, within a few years of the granting of municipal senates: "If a senator strike or censure in an unseemly manner the prytanis, or another senator, he shall be deprived of his rank, and set in a position of dishonour."

The public safety was in a bad way, as about A.D. 213 a decree was put out by Baebius Juncinus: "I have already, in a previous letter, ordered you to search out robbers with every care, warning you of the peril of neglect, and now I wish to confirm my decision by a decree, in order that all inhabitants of Egypt may know that I am not treating this duty as an affair of secondary importance," etc., etc. This is followed by another proclamation: "That it is impossible to exterminate robbers apart from those who shelter them is evident to all, but when they are deprived of their helpers we shall quickly punish them. There are many methods of giving them shelter; some do so because they are partners in their misdeeds, others without sharing in these, yet" This is the documentary background for Achilles Tatius.

As in modern times, money was the universal key in Egypt, and the buying exemption from the *corvée* was so usual, that strict orders were given for the *corvée* on canals, "to see that the overseers usually elected for the purpose are chosen from magistrates or private persons who will compel everyone to perform his proper work by personal service, according to the rule given in the constitution of the appointment, with no malice or favour, . . . and that absolutely no money is exacted from anyone in place of work. If anyone dare to attempt exactions or neglect these orders, let him know that not only his property but his life will be at stake."

The continual depreciation of the Alexandrian coinage even led to hoarding the old Ptolemaic tetradrachms, the forebears of the wretched copper dumps of

the third century. The coinage was bad enough under Gallienus, but when the further debasement of the usurpers Macrianus and Quietus came out, the banks closed in despair. Promptly came a proclamation of the governor: "Since the officials have assembled and accused the bankers of the banks of exchange of having closed them on account of their unwillingness to accept the divine coin of the emperors, it has become necessary that an injunction should be issued to all the owners of the banks to open them, and to accept and exchange all coin except the absolutely spurious and counterfeit; and not to them only, but to all who engage in business transactions of any kind whatever, knowing, that if they disobey this injunction, they will experience the penalties already ordained for them in the past by his highness the praefect." The milreis of Brazil was quite outdone in baseness by the nominal currency of the fourth century, in which 2,250,000 denarii, or 1,500 talents, was to be paid for a new carpet, really worth about £10.

The reports of the Senate of Oxyrhynchos give a curious living view of affairs. The prytanis had called an emergency meeting to settle some immediate business, and on his stating it in general council, "The senators said: 'Invaluable prytanis; save yourself for us, prytanis; excellent is your rule.'" He then tried to resign at the end of his term of office. "The prytanis said: 'The law commands us that the coming prytanis should be nominated six months beforehand, I remind you.' The senators said: 'The nomination is made with a resolution.' The prytanis said: '... for I have long been ill, and have a cough from my lung, as you know.' The senators said: 'Illustrious prytanis, noble prytanis, still labour for us; labour in a manner worthy of the past.'" All this is much like the acclamations of the Roman senate in the Augustan histories. "The gods continue Claudius our Emperor to us. This was repeated sixty times. We have always wished to have Claudius to be our Emperor. This was repeated forty times, etc." These repetitions probably mean the number of senators who joined in the shout, for it is impossible to suppose phrases said by the same persons sixty times.

The burden of public office was often evaded. "Two communications from the strategus having been read, one concerning the appointment of a substitute for Actiasion, conveying collectors of wine, who had absconded, the other concerning the appointment likewise of a substitute for Theon, senator, conveying collectors of barley, who had absconded; after the reading the prytanis said: 'Appoint persons to do the duty in order that the carriage of the annona for the most noble soldiers may not be hindered.' The senators said: 'Let them not be nominated beforehand... lest they run away.'" When one was nominated to office, "Ptolemaios, son of Damarion, chief priest, said: 'I entreat you, I cannot serve. I am a man of moderate means, I live in my father's house.' The prytanis said: 'Ptolemaios still requires to be pressed by you, for he, too, shrinks from so great an office.' Endaimon, exegetes, said: 'Ptolemaios, too, is a man of moderate means, and unable to bear the burden.' Ptolemaios, son of Damarion, said: 'The office is beyond my powers.'" Thus they went on endeavouring to avoid the ruin which public duties entailed. Using influence was as customary as it is now. "To my lord and brother Heras Ammonios, centurion, greeting. The bearer of this letter is my tenant. He states that he has been appointed to a public office at the village of Dositheou, namely, the collectorship of tunics and cloaks, but has not yet been entrusted with the collection. Accordingly, use all your efforts, brother, to rescue him from the office," etc.

The cumbrous notation of years by reigns or consulships was gradually replaced by fixed eras in the fourth century. As was natural, various attempts were made

before general consent was reached. A list of the seven different eras used shows the number of instances, and practically they come to two—A.D. 307 and 325. Now these seem to be the Pagan and Christian reckonings; Licinius, the last of the Pagan series, became emperor on 11th November, 307, and Constantine gave the official triumph to Christianity by the Council of Nicaea, May to September 325. The editors note the latter, but omit the Pagan dating point. The datings given by horoscopes prove of importance for rectifying the uncertainties of the period from A.D. 250 to 284. A full discussion of the material is given, which needs tabulation; the crude result is that Gallienus only reached his fifteenth year, and we must allow a third year to Claudius and a seventh to Aurelius.

The lists of taxes show the network which restrained enterprise. The individual paid his poll-tax. On lands were the State land tax, vineyard tax, garden tax, and bare land tax. On produce, the corn dues were most important as feeding Rome; pigs, asses, trades, and specially cloth weaving, were taxed. For special officials there were taxes for the desert guards, the prison guards, the eclogistes and the *Idiologos*. The labours of embanking and of public earthworks (*naubion*) were commuted for money. The baths paid a third, receipts paid, and a charge was made for public libations. All intercourse with different parts of the country (as in Italy a century ago) came under the customs dues and an export tax of two per cent. Many other obscure taxes also appear, and emperors and high officials had a gratuity in lieu of being presented with a golden wreath on taking office.

Under Caracalla there is an interesting list of the temples and their property. Among the gods is a Syrian Atargatis Bethennunis, *i.e.*, of the "House of the Gracious" or "Merciful," a title of Derketo there; probably this is Beit Hanun, $2\frac{1}{2}$ miles N.E. of Gaza. This is about three miles from the mouth of the valley which was probably the fish pond sacred to Derketo, behind Ashkelon, described by Diodorus (II. 1). The temple property was sometimes recent, but "in other cases we are ignorant of the dedicators, because the offerings have been in the temple from antiquity." We may note a statue of Demeter, the bust of Parian marble, the figure of wood; a bust of Parian marble with amulets of plaster; of gold, are sacred lamps, ten armlets for a child, two spoons, one small gold pen; of silver, are bracelets, armlets, a toy mirror, and lamps. A lamp with a statue of Kore of unstamped silver, weighing a pound, plated on wood; a gold lamp; an altar of silver weighing 1 lb. $5\frac{1}{2}$ oz.; a statuette of "the most great goddess," weighing 15 lbs. In the villages of the nome, at Sinari, a representation of Caracalla, Severus and Domna, "a dark red covering, decayed and useless, one bronze folding mirror in new style." At Ta . . . a representation of Caracalla, Severus and Domna one bronze trencher, statuettes of Zeus and Hera. These representations (*ἱκονεῖδιον*) of the imperial family were distinct from a statue (*ἑσάριον*) or statuettes (*ἀνδριαντάκια*). They may have been painted panels, like the well-known portraits, as they were placed apparently in every village of note. This inventory gives a curious view of the state of the local temples before they were pillaged.

An interesting document on the independence of educated women, is a petition for the recognised rights. "Laws have been made, most eminent praefect, which enable women who are honoured with the right of three children to be independent, and act without a guardian in all business which they transact, especially those women who know how to write. Accordingly I, too, fortunately possessing the honour of being blessed with children, and a writer who am able to write with the

greatest ease, in the fullness of my security appeal to your highness," etc. The good lady was Aurelia Thatsons, also called Lolliane; she was the daughter of the clerk of the market, and probably learned business in her father's office. Four years later she does her own business in buying back a lot of family property, which is carefully specified down to "a tank in disrepair, and the water-wheel, likewise partly in disrepair," specifying exactly the date of division of taxes and of produce. She then paid twelve drachmae tax to have the deed registered.

Another curious point of woman's law is, that as the husband was responsible for his wife's debts, the way to clear up a bankruptcy was to divorce the wife with her dowry, let her go bankrupt on her own estate, lend her money to clear up the accounts, and then re-marry her with a pre-nuptial lien on her property, in order that, in case of a serious divorce later, he should not lose his claim to repayment. The legitimate rights of their son were duly guarded in the various documents. Also, in case he levied on her property, due alimony out of it was to be allowed. A copy of the wife's declaration is included: "As I know how to write, and am making a marriage-contract with my former husband Horion . . . , by the terms of which Horion obtains security for the sums which he lent me," etc. This is a strange mixture of matrimony and business, but it shows what precautions are needed in a Married Woman's Property Act.

Lastly, there is a strange list of questions to an Oracle, and a charm for racing in the name Sulikusēsos, which suggests some compound of the Celtic gods Sulis and Hesos. Altogether it is a volume of general interest, apart from the many technical questions of government and currency in which it assists.

The Geography and Geology of West-Central Sinai. By JOHN BALL, D.Sc., etc. 219 pp., 54 figures, 24 plates. 8vo, 1916. Cairo, Government Press, 30 P.T.

This volume is a generous gift to science by the Survey Department, treating a very interesting region in detail, and providing a fine map, 22 inches by 27 inches, with minute hill shading and geological colouring, for the nominal price of 6 shillings. To anyone who has a feeling for the wildest of country, gorges, precipices, the most astonishing hill sculpturing, and all bare to the eye with dozens of ancient faults visible miles away, there could be nothing more fascinating than to wander, map in hand, climbing across the continual changes of strata. How Dr. Ball managed to get over 340 square miles of such desperate country in about 240 days, including all the main triangulation, is surprising. One of the strangest feats was keeping his field plotting sheet so clean through all the work that it could be photographed for publication; thus there is none of the usual office beautifying, but it is all shown as it appeared on the spot. It is disappointing that the map only just includes the Serabit temple without its surroundings, and just misses Wady Maghara. Thus, the ancient sites will be split up on the boundaries of three sheets of survey.

Beside the maps, several sections across the country are given, showing the many sharp displacements of strata, sometimes of hundreds of feet up and down. Even this does not express what is perhaps the most impressive sight, cliffs of granite cracked across in every direction, and each crack healed up by a flow of molten rock cementing it together. Perhaps the next most surprising sight is to see the tops of hills capped by a flow of basalt, to know that the outflow was not before the late Miocene age, and yet denudation since then has removed 200 feet of hard basalt and ploughed out hundreds of feet of sandstone to form the present gorges and precipices below the basalt.

The present volume is divided into seven chapters; the general description of climate, life, geology and people; the methods of the survey; a description of the valleys; a description of the mountains; the country up to Suez; the stratigraphical geology; and the physical geology. Most of these chapters are well worth reading by anyone with scientific interests. The methods of survey in particular contain various improvements on the usual practice. The description of the features of the country is hardly of interest to those who do not know it; but the discussion of the changes that the rocks have undergone, and the nature of their weathering, touches many noticeable matters. The curious hardening of the surface, and decay inside the stone, until it is merely a hollow box, is very familiar in the Eocene limestone of the Pyramids, and is here ascribed to the consolidating action of dew. This, however, will not account for the deep hollows, almost caverns, that are seen in the red granite, large enough for several men to stand in. Some further account of the gravel beds in the valleys would have been welcome, in view of the occurrence of worked flints in them, and the questions of the recent geological history of the region. The submersion to a depth of 800 feet, shown by high level gravels in Egypt, due probably to the Rissian glacial period, would have covered the whole plain of El-Markha and filled the valley mouths for a few miles. Probably the plain is due to estuarine deposit from the valleys, and patches of high level gravel might be found in the lower reaches of the valleys. There would be good ground for a palaeologist to work over, in searching the lower Sinai valleys for remains of submersion and human work. When the world is quiet again, there remains fascinating work to be done in Sinai which will be greatly helped by the surveys and excellent maps in this volume.

Recent Discoveries at Kom el-Hisn. By C. C. EDGAR. 8 pp., 5 plates. 1915. (*Le Musée Égyptien*, III, ii.)

The main paper of this fascicule having been already discussed (1916, p. 114, *New Portions of the Annals*), the present paper remains to be noticed. The rock cliffs of Upper Egypt have preserved most of what we know about the Middle Kingdom, and the flatness of the desert bordering the Delta has been unfavourable to preserving the history. Tombs must have been constructed, and not rock-hewn, and stone has always been so greedily sought for in the lower country that whatever is known is certain to be carried away. Nine years ago Mr. Edgar published two tombs at Kom el-Barnougi, which appeared to belong to the earlier part of the Middle Kingdom, but with a strong influence of Old Kingdom style remaining. Now another tomb of the same character is published, which has been found at the great site of Kom Hisn, the western border of the Delta, within sight of Naukratis.

This tomb is a single chamber, 168 inches by 55 inches, and 77 inches high, hardly more than a shrine for the coffin. The burial had been entirely robbed, and nothing but brown dust remained. The deceased, Khesu-ur, held many priestly offices. Foremost of these was his leadership of the priestesses of Hathor. Before him is shown the choir-master holding two sistra like battledores, beating time for the ten *khenru*, sistrum bearers of Hathor. Next is shown the choir-master clapping his hands, leading the ten *seferut* or singers of Hathor. The choir-master is entitled Dua-khesu "the striker of adoration," that is, the rattler of the sistrum; and this explains the name of the deceased, which is variously written Khesu-ur and Dua-khesu-ur, or *Dua-khesu-ua*, that is, the "chief striker" or sistrum player. As he was *mer*, overseer, of the *khenru* and of the *seferut*, it is obvious

that these are the two classes of sistrum players and of singers shown before him. The *neferut* were the inferior class, probably girls whose voices were good, and who, when older, might be raised to sistrum players. Other titles were *mer neter henu*, overseer of the prophets; *shez neter henu*, illuminator or instructor of the prophets; *mer neter hat*, overseer of the temple; *Asar-neb zedu neter hen*, prophet of Osiris of Zedu; *meti en sa*, priest (imparter of the *sa* influence?); *neter mer*, beloved of the god, and some other less clear titles. The variant of the name, ending in *ur* or *ea*, both meaning great, should be remarked. There can be no question of the vocalisation *ur*, as it is written with the bird and mouth. A somewhat similar variation occurs on the XVIIth dynasty ushabtis variously written Teta-on (with the eye), or Teta-res.

The scenes in the tomb are the traditional subjects of ploughing and harvesting, catching birds with a clap net, the master harpooning two fish and fowling with a throw-stick, the cutting up of offerings, and the tending of cattle.

A head of a royal statue in basalt was found thrown into the plundered tomb. It is somewhat like Amenemhat III, but more forcible. It is too pinched in the face for Senusert II or III. It might be of Amenemhat II or IV. It is an interesting addition to the portraits of the XIIth dynasty, and whenever we have a complete portraiture of the kings compiled, we may hope to fix its origin.

Bulletin of the Metropolitan Museum of Art, New York. Monthly, 10 cents. May, 1916.

This well-illustrated record of work and acquisitions is always welcome. What a gain in public interest it would be if our national museums were equally communicative! In this number are seven views, two figures, and a plan of the excavations to the south of the pylon of Rameses III at Medinet Habu. The stretch of dusty heaps leading away to the ruins of the Coptic town were suspected by Maspero to cover some remains of buildings, and he proposed that the Davis excavations should be transferred to this region. The site proved to have been greatly denuded; nothing remained over five feet high, and the brick walls had been entirely removed. Three stone baths have been found, and a dais with one ascent of steps, and another dais with three flights of steps. Of the upper parts of the building are three stone grilles for windows, with the cartouches of Rameses III placed between hawk supporters.

These bath-rooms and the throne-dais seem to mark this building as a palace of the king, adjoining his great temple. The temple proper could not be inhabited, and the tower entrance was but a gateway in the great temenos wall, and would lead equally to the temple and to the palace or other buildings within the temenos. It is hoped that further clearance here may explain the plan of the building.





Bulletin, November, 1916. "Ancient Egyptian Kerchiefs" gives an account of certain oval cloths, with tapes sewn on them, which were found in a tomb in the Valley of the Kings, of the time of Tutonkhamen. A study of these has now shown Mr. Winlock how they were used. The ends of the tape were tied behind the head and the cloth thrown back over them; in such a position it would exactly cover one of the full wigs which were worn in the XVIIth dynasty. The dusty climate of Egypt made a covering very necessary for the hair; an oiled wig, after a dusty day, must have been a sorry sight. Having this pattern of one form of wig cover, Mr. Winlock proceeded to plan the other forms of head-coverings that are known. He restores the *khat* commonly worn by working women, which was adopted as the regular type on figures of Isis and Nebhat. The Arab and

modern Egyptian custom of women always wearing a shawl or wrap over the head is similarly as a protection of the hair from dust and dirt. Another headdress, also here restored, is the striped *nemes*, which is shown to be similarly a covering for the wig. It is notable how these various headdresses all arose from the utility of a covering for the hair, natural or artificial. There has also been a suspicion that the *hhepesh* headdress was a leather case to cover the double crown of Egypt; if so, originally, it became later worn alone as a substitute for the crown, much like the dummy swords still worn in court dress.

In the *Bulletin*, January, 1917, is an illustration of a limestone face of a woman, which is assigned to the XXXth dynasty. The style would rather suggest an earlier date—before the archaistic work of the Saites. It is only a face and neck, without any back or top to the head, and is hollowed out at the back; it seems, therefore, as if it were a sculptor's study from life, ready for use by a statuary. Two such life studies are in University College, of Narmer and of a Roman.

Declaration d'un Domaine Royal.—A. MORET. (*Comptes Rendus Acad. Inscr.*, 1916, pp. 318-333.)

This is a careful study of a group of three documents of the reign of Pepy II, referring to a single property at Koptos. Two of these were found by Capt. Weill (but were misattributed to the VIIIth dynasty), the third was bought by M. Moret at Thebes. One of these found by Capt. Weill was incomplete, but has been restored from parallel passages, here in ellipses. This earliest stela may be translated thus:—I. "(The Horus Neterkhon, year x; Royal decree for the director of the pyramid town, judge of the Gate, vi)zir, prince, director of the South, director of the scribes of the domain (*netu*) of Koptos, of the nomes of Nekheb (III), Denderah (VI), Panopolis (IX), Abydos (VIII), Hierakonpolis (XII), Lycopolis (XIII), and Cusae (?) (XIV), SHEMĀA. (The temple of Min in) Koptos of the Two Falcons. The royal offering of the statue of the king of the South and of the North Neferkara *maa-khrou*, which he (the king) has given to his (the god's) endowment, is established in the Palace (unto eternity) by the order and on account of the king of the South and North, Neferkara, living in time and to eternity, to-day renewed:—that is of fields 3 aruras in the two-falcon (city of Koptos. This is constituted by writing in the) office, sealed with a seal, signed by many hands. The offering is specified in the register in these terms: composed of fields, vineyards, orchards, (gardens with excellent things of all sorts) in them. Their name has been given as 'Domain Min-prosper-the-domain-of-Neferkara,' in the office of agriculture. The corvées are settled at the same time, and the serfs are raised for this farm among the serfs (who are in the South for doing the service) of all the requirements and corvées of the Palace; he who may not know his previous tenure will have his duty settled by declaration of the notables.

II. "Go, then, (to the country, descend to) the field to establish the divine offering there, in daily portions of each day, and more for offerings of feasts (which exist already in the temple of Min of Koptos of the) Two Falcons; for it is established for the statue of Neferkara *maa-khrou*—in bronze of Asia () bordered (  ) with gold—brought to this temple—for daily service. (Make therefore a contract with the hour-priests of) this temple, that the corvées be established at once, and the declaration made to the people who are at disposal of the authority there, by the levy of the prince, sole friend, sacrificer of Min, director of the prophets, ADA, in Koptos of the Two Falcons.

III. "(As there is made for him truly a decree) for him to make declaration of the fields in the office of agriculture, with the chiefs and managers of the domains, and the serfs of the fields, adding thereto the offering of pigeons, (and of geese, and the slaughter of oxen and of birds) as it is established for the high feast of the god. And it is the prince, sole friend, sacrificer of Min, director of the prophets, Ada, who is director of the office of agriculture (of this domain Min-prosper-Neferkara in) Koptos (of the Two Falcons). In what concerns you, put the people of the king in this office of agriculture under his authority, and see that they are governed by this declaration in the country"

These three declarations are of different effect; the first is to the vizir and nomarch, stating the endowment for the statues is specified in the registers; the second is to the director of the temple to organise the service of the statue; the third is authorising him to take trust of the land of the endowment and manage it. All of the official terms here are paralleled in the Greek bureaucracy of the late times.

Of the next decree the beginning is lost. It refers to the separation of the endowment land from the royal property, and its being attached permanently to the temple endowments: "My Majesty has not permitted any perpetual charge to be made, and My Majesty will not any more claim by the director of the South Land or any noble, on this domain Min-prosper-the-building-of-Neferkara." On the contrary, it is reserved to the temple, and under its protection.

"Every director of the South, every noble, every messenger, every scribe, if he does not conform to the words of this decree of the hall of Horus (the king) and of the authority of the registers, My Majesty will not allow him to be a priest of the pyramid Men-onkh, nor of any domain under his authority. And My Majesty has ordered setting up a mast of foreign wood in this new town (*i.e.*, the decreed domain); My Majesty has ordered that this decree should be placed on a white stone at the gate of the temple of Min in Koptos. This decree is also for the director of the labourers of this domain, and for the director of the office of agriculture, for the sons of their sons and the heirs of their heirs. My Majesty has sent the sole friend Ada on this matter."

The mast of foreign wood is supposed by M. Moret to be of cedar of Lebanon. Rather it might be a straight fir pole, like the maypole in a village of the West. Was not this the emblem of a village or "new town"? Was not the right to a centre of rustic worship and festivity the mark of an independent community, not subject to municipal claims of any neighbouring town? In England, the maypoles were called by the Puritans the "idols" of the people, and Pasquil, in 1634 wrote: "Where every village did a maypole raise."

Some years later a third decree renewed the rights of this endowment. It has been fully published by Capt. Weill, and is summarised by M. Moret. The decree is likewise of Pepy II. It directs the royal agents to define their relation with the serfs of the new domain established to furnish the daily offerings to the statue. These people are reserved anew to the temple of Min, and freed from the *corvée* due to the Palace. The various dues claimed on the royal estates are enumerated in order to specify that they cannot be claimed from these serfs, who now belong to the service of Min. The dues are in two classes, *mezern*, the taxes literally wrung from the people like wine from a twisted cloth wine-press, and *katu*, public works. The taxes were charges on goods due to the treasury, and taxes on the place; levies by the viceroy of the South; contributions of gold, silver, and common metals; supplies of material to the registry office; food dues of baskets

of vegetables, eatables, fodder and bread; perhaps, also, cordage and linen yarn. All of these taxes in kind are known at the other end of the history, in late papyri; so, probably, they were claimed at all times. The public works, *corvées*, were cultivation of royal lands, harvesting and various works, doubtless including canals and embankments, as in modern times. Lastly, there is the charge of "passage by land and water," the claim for beast and boat in the king's service, which has been usual in most countries. Probably the exactions in the temple service were not so heavy, and so the people claimed protection from the squeezing by royal officials. These decrees give valuable light on the administrative system, and the close parallel with the Ptolemaic and Roman customs show how long continued was this taxation, which eventually ruined the country when applied for the benefit of the absentee landlord, the Roman Emperor.

Le Sinaï et l'Exode.—GUSTAVE JÉQUIER (*Revue de théologie et de philosophie*), 1916. (Lausanne.)

This is a review of the work of Prof. Cart, of Neuchâtel, on his Expedition to Sinaï; popular in the first part, and discussing historical problems in the second part. The conclusion of the author is that the original record described Moses as leading Israel to Qadesh, and that later the account of Sinaï was substituted. This point of view seems to contradict all we know of the veneration of holy places. If Qadesh was the root of all the sacred traditions and history of the people, why should they entirely neglect it and transfer their history to a remote district of which they had no reason to know anything at all? It seems contrary to common sense, as well as to many documents, to suppose such an inversion.

Another conclusion of Prof. Cart is that the Israelites divided into two parts, one of which went into Egypt while the rest were in Moab. The Egyptian portion then entered Canaan from the south, while the eastern portion came across the Jordan, and were the Khabiru under Amenhetep IV. They only became united under David and Solomon, and soon broke apart again. There is much to be said for a division of Israel, but the record points to their reunion before the entry into Canaan, during some twenty years in Moab.

Les dessins des vases préhistoriques égyptiens.—E. NAVILLE (*Archives Suisses d'Anthropologie générale*), 1916-1917. (Genève.)

In this paper Prof. Naville repeats his views as to the boats on the vases being drawings of stockaded forts. He first debates the meaning of the wavy lines on these vases (see *ANCIENT EGYPT*, 1916, p. 34), proposing that they do not represent water, but ripples on sand dunes. They really represent neither, but the cordage in which stone vases were carried; the proof of this is when they run diagonally, crossing from top to bottom of a vase.

As to the boats, the critical examples must be examined; they are ignored in this paper. In the first number of *ANCIENT EGYPT*, 1914, p. 32, are the figures of an unquestionable boat with a man at the steering oar, and the figure of a boat from a vase with three great steering oars. The cabins are alike on both, it would be impossible to deny their connection. The new carved ivory from Gebel el-Arak (*ANCIENT EGYPT*, 1917, p. 27), shows boats of the same general form, with cabins. There is no ground whatever for removing some of these boats to the category of land forts.

The so-called aloes on the vases are explained by a Bantu custom of having a village tree to which offerings are made in a vase.

NOTES AND NEWS.

WE have received from Mr. Willey the following translation of Monsieur Pézard's report of May, 1913, on excavations about a mile from the British Residency at Bushire:—

"I have the honour to report that the mission entrusted to me by the French Government, and which I have directed with the assistance of my brother, Lieut. G. Pézard, has just terminated, and before leaving Bushire, I should like to bring to your notice the main results:—

"The hill close to Sabzabad was occupied at a very ancient period and the most modern documents found on the top of the hill date from the middle of the Elamite epoch (about 1,100 years B.C.), and consist chiefly of inscribed bricks belonging to a construction of the Kings Shanterank Nukhanti, Kantir Nukhanti, and Shilkhat-in-Shanshinak, kings of Anzar and Susa. The texts are common to temple buildings built in these regions, and chiefly at Susa, and mention especially the sanctuary of the goddess Kirinsha. The row of stones found on the same plane and below the Elamite monument would appear to have formed part of the walls of the building. A plan has been drawn up so far as subsequent treatment and excavations previous to the French Mission render it possible. Besides the inscribed bricks, the Elamite epoch is represented at Bushire by numerous fragments of clay vases, some specimens of stone vases, arms made of brass and of stones and some rings and pearls.

"Below the Elamite level and as far as the bottom of the hill which is cut in two by our trench some 50 metres long and 8.50 deep, the excavations have brought to light a large number of fragments of different vases of which one is more than 1 metre in height and is complete. The vases decorated by the designs 'of the II style' are more numerous at this level than above. The arms and stone tools are also very numerous, but there only remain traces of metal utensils. In the very complete report which we have drawn up there figure numerous types of cut flints (arrow heads, scrapers, etc.) and some polished axes from the neolithic epoch. It may be said that this part of the hill covers the most ancient civilisation which has existed at Bushire.

"The map of the hill and of the more recent Arab and Portuguese ruins which exist in the neighbourhood of Subzabad has been prepared by Lieut. Pézard. Lastly, numerous specimens of shell-fish and bones have also been found in the course of excavations in the hill.

"If our work shows little result from the artistic point of view, it is full otherwise when viewed from the scientific side. Thanks to our excavations, it is possible to form a rough idea of the successive civilisations which this part of the island has seen."

Mr. Guy Brunton is now in the Durham Light Infantry, working in France with the 8th Labour Company. Capt. Engelbach, R.E., is shortly to move from Newhaven. Mr. Lawrence is with the sons of the Sherif of Mecca.

ANCIENT EGYPT.

A NEW KINGDOM POTTER'S MARK.

IN October, 1916, I was fortunate in buying for 3 piastres ($7\frac{1}{2}d.$) at el-Arahah (Abydos) the pot here illustrated. It is of a well known style, very typical of the early XVIIIth dynasty, and perhaps running back into the period intermediate between the Middle and New Kingdoms.¹ The pot is ornamented with a variety of the decoration common on this class, which is done in the usual dark purplish-brown paint. It is a rather coarsely made specimen, but its clay is of that fine quality which varies from drab to red, and of which these pots are generally made. In this case the clay has turned rather red. Thus, in every way it is a very ordinary pot of the period stretching from the seventeenth to the fifteenth centuries B.C., except that in one of the panels it bears a group of two signs, **CB**, quite clearly written, and in precisely the same dark purplish-brown paint as that in which the decoration is done. There can be no doubt but that these signs are of the same date as the pot itself, yet they at once call to mind letters from the classical alphabets of a date later by many centuries than those to which our pot is assignable.

Of this curiously late style other signs have been found at Tell el-Yahudiyeh, incised as potters' marks on the backs of faience tiles for inlaying on walls, as were a number of hieroglyphs, and also other signs of a purely fanciful form. Their first appearance not unnaturally led their discoverer to speak of them as "*lettres grecques*," and to think that the tiles were "*probablement aux temps des Ptolémées*."² Prof. Hayter Lewis³ also calls them "Greek letters," and, on the authority of Mr. Chester, says that "tiles of the same kind, also with Greek letters at the back, are in the Louvre Collection, having been brought back from Assyria." Later, however, Mr. Griffith⁴ considered "that they (the tiles) are natural representatives of Ramesside work," and since then tiles of various classes have come to light in Egypt of various periods back to the earliest dynastic times; so that so far as the tiles themselves are concerned, there is no need to doubt that they are of the date of Rameses III, *i.e.*, early twelfth century B.C. There can also be no doubt that the "Greek letters" which they bore are also of this date, for here we have other signs of the same class on a pot several centuries earlier, *i.e.*, seventeenth to fifteenth centuries B.C. The "Greek letters" on these Ramesside tiles were **ΕΑΙΑΜΟCΤΧ**. Of the two on our pot, one, the **B**, does not occur in this Tell el-Yahudiyeh list, though known elsewhere at about the same period of history, *i.e.*, in the XIXth dynasty or thirteenth century B.C.⁵

These signs no doubt belong to that group of pot marks which Prof. Petrie has discovered in Egypt from time to time, and of which many forms run right back to early predynastic times. He has recently collected together⁶ those forms

which are similar to, or identical with forms of letters occurring in the syllabaries and alphabets of other countries and other times. While examples of some of these, such as Nos. 1, 4, 18, 25, 27, 33, 39, 41, 47, 48, are remarkably like the shapes the Greek letters had assumed by classical times, the great majority of them are not of the classical, but of the pre-classical and barbarian forms. On extracting from Petrie's plates those forms which resemble the classical, and adding those from Tell el-Yahudiyeh and our own two, we obtain the following table:—

Letter.	E.P.	L.P.	I.	XII.	XVIII.	XIX.	XX.
A	1	1	—	1	1*	—	Y
E	—	—	—	—	4	—	Y
I	7	7	7	7	7	—	Y
O	9	9	9	—	9	—	Y
B	—	—	—	13	●	13	—
Φ	18	18	18	18	—	18	—
C	—	—	21	21	●	21	Y
H	25	25	25	25	25	—	—
X	27	—	27	27	—	27	Y
Δ	33	33	33	33	33	33	—
T	—	—	39	—	39	—	Y
Λ	—	41	41	41	—	—	Y
N	—	—	—	47	47	—	—
P	—	—	48	—	48	—	—
M	—	—	—	—	—	—	Y
15	7	7	10	10	11	5	9

In this table E.P. is early pre-historic, L.P. late pre-historic, and the numbers I to XX refer to dynasties. The numbers placed in the columns are those attached to the sign in the plates of *The Formation of the Alphabet*. The two spots are the marks here published; the Y represents the signs from Tell el-Yahudiyeh.

The classical forms of the following seven out of the above fifteen letters had already come into use in quite early Greek times:—⁷

8th cent.

T

7th cent.

Δ

I

O

X

625-575.

B

P

Φ

but the C of our pot does not come into use for σ until quite late, 310 B.C., and not into regular use until 130 B.C.⁸ It should therefore rather be compared with the C of the early local Greek alphabets, where it was employed, not for σ, but for γ as early as the sixth century.⁹

Prof. Hayter Lewis' reference to the finding of potters' marks of a similar class in Assyria seems worth following up, as such an enquiry would no doubt extend the area over which this group of signs is known to have been used.



PAINTED JAR WITH POTTER'S MARK.
Abydos. XVIIIth dynasty.

References.

- ¹ Peet, *Cemeteries of Abydos*, II, p. 69.
- ² E. Brugsch, *Rec. de Trav.*, VIII (1886), p. 5.
- ³ Hayter Lewis, *Trans. S.B.A.*, VII (1881), pp. 182, 188.
- ⁴ Griffith, *Tell el-Yahudieh* (1890), p. 41.
- ⁵ Petrie, *Formation of the Alphabet*, Pl. II, No. 13.
- ⁶ Petrie, *Formation of the Alphabet*, Pls. I to V.
- ⁷ Larfeld, *Handbuch der griechischen Epigraphik*, II, Tafel II, at the end of the volume. See also Tafel III at the end of Vol. I, where some are found even earlier in the local alphabets.
- ⁸ Larfeld II, Taf. III.
- ⁹ Larfeld I, Taf. III.

G. A. WAINWRIGHT.

THE VOLUME OF THE TRUNCATED PYRAMID IN EGYPTIAN MATHEMATICS.

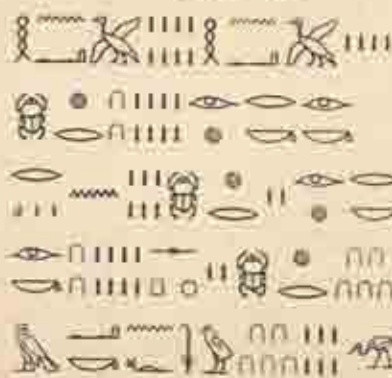
IN the collection formerly belonging to Mr. Golenistsheff and recently acquired by the Museum of Fine Arts in Moscow, there is a Mathematical Papyrus of thirty-six columns, in hieratic writing of the epoch of the late Middle Empire. Paleographically it is like some of the Illahun papyri, whilst the breadth of its leaves brings it near to the MSS. of Sinuhe, found in the Ramesseum. This papyrus contains nineteen problems, some of which give us new types of calculation unknown till now, and therefore somewhat difficult to comprehend. Four of these problems are geometrical ones. The first shows how to define the length of the sides of a quadrilateral, when the relation of the sides and the area of the quadrilateral are known. The two next give a method of calculating the area of a triangle; a method already known to us. The fourth presents us, I am inclined to think, with something altogether new in Egyptian scientific literature.

This is the transcription of the XXth and XXIst columns of the papyrus:—

XX.  (rubr.)



XXI. 













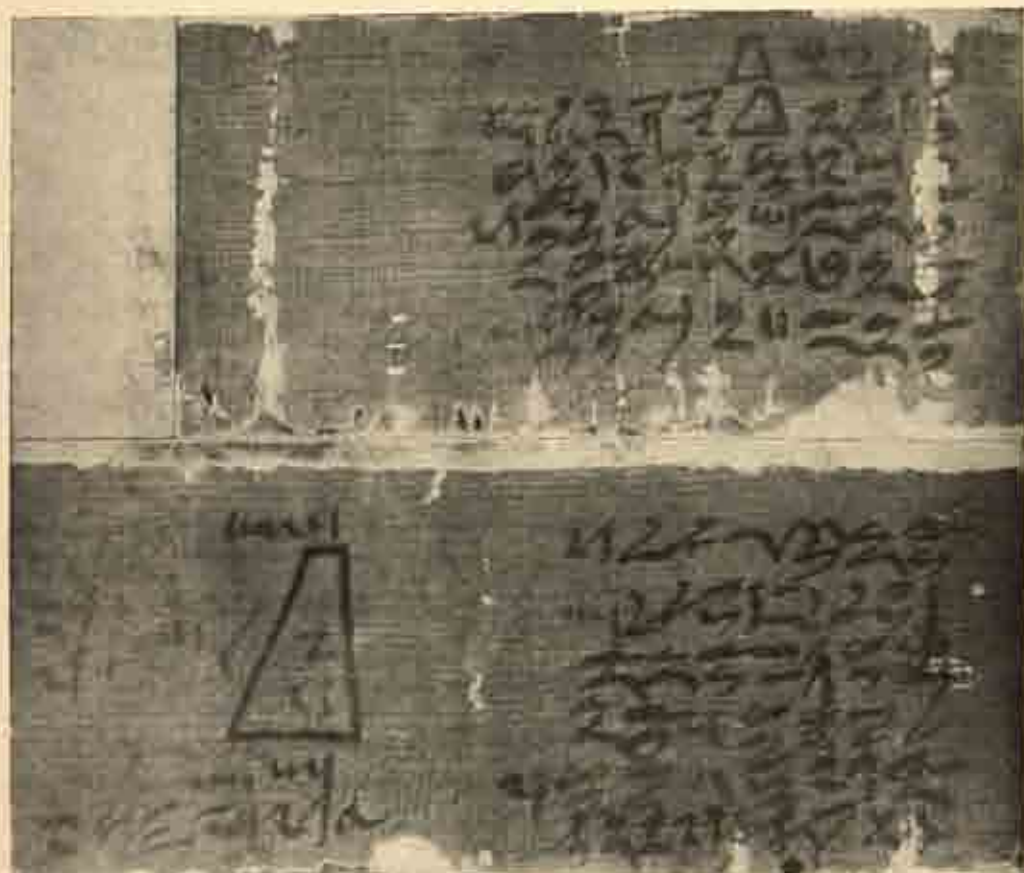


 orig.

This is the translation of the problem :—

"The problem is to make a \triangle . If it be said: '... 4 below, 2 above,' do as follows: square this 4, which gives 16; duplicate 4, which gives 8. Do as follows: square the 2, which gives 4. Add the 16 to the 8 and the 4, which gives 28. Do as follows: take $\frac{1}{3}$ of 6, which gives 2. Do as follows: take 28 twice, which gives 56. This is the 56. You will find it correct."

Leaving aside for a while some rather obscure points in our problem, let us try to define its main object. The sketch represents a trapezium, but the calculations do not answer to our definition of the area of a trapezium, nor to the



CALCULATION OF VOLUME OF TRUNCATED PYRAMID.
XIIIth dynasty.

Egyptian one. On the contrary, they wholly correspond to our calculations of the volume of a truncated pyramid. Our formula for it: $\frac{h}{3}(A + A_1 + \sqrt{AA_1})$, where A and A_1 represent the area of the upper and under base and h is the height, wholly corresponds to the solution of the Egyptian problem. In fact, the area of the upper base in the latter is $2 \times 2 = 4$, the area of the under base is $4 \times 4 = 16$; $\sqrt{4 \times 16} = 8$; h is 6. Placing these numbers in our formula we get: $\frac{6}{3}(4 + 16 + 8) = 56$. The Egyptian mathematician follows the same method; we only do not understand how he came to define the mean proportional area; it can be only empirically. The term $\overline{\text{trapezoid}}$, which we met here for the first time,

THE GOD SOPT.

THE pantheon of the ancient Egyptians included certain gods who were of non-Egyptian origin, but who were given a place by the side of the older local divinities under the influence of the syncretism that went with the settlement of other people in the country. Among these gods was Sopt, or Sopdu, a name written with the sign of a cone and a mummified hawk, on whose origin and associations light is thrown by the recent excavations in Sinai and in Syria.

Sopt was first named in the Egyptian records of the XIIth dynasty and is again mentioned in the XVIIIth dynasty. The foothold which he gained in Egypt seems to have come as the result of the help which his votaries gave to the Egyptians, by throwing back the Mentu, who were Asiatics, for a nome text of Edfu contains the words: "Shur is here Sopt, the conqueror of the Mentu, lord of the east country, and in Edfu golden Horus, son of Isis, powerful god Sopt" (Brugsch, *History*, 1888, p. 368). The title lord of the east was generally applied to Sopt. Thus a tablet of Senusert II (XII, 4), found in the temple of Wady Qasus in the desert of Qoceyr on the borders of the Red Sea, called him, "Sopdu, lord of the eastern foreigners, and lord of the east (*Neb-adbt*)" (Wilkinson, *Manners and Customs*, III, 236). He was represented standing without headdress, carrying in each hand an *ankh* or sign of life (Wilkinson, *Manners and Customs*, 1878, III, 228). On inscriptions of the reign of Amenemhat III (XII, 6) found in Sinai, organisers of mining expeditions described themselves as, "beloved of Hathor, mistress of the turquoise country; beloved of Sopt, lord of the east; beloved of Sneferu and of the gods and goddesses of this land" (Breasted, *Records*, I, 722).

The description of Sopt as lord of the east refers to his cult in the eastern Delta. Pa-qesem, the capital of the later nome Arabia, had the alternative name Per-Sopt, i.e., "house of Sopt." Pa-qesem is the land of Goshen of the Bible, and the name Per-Sopt survives in the name of the present village Saft el-Henneh.

The god Sopt likewise had a foothold at Heliopolis, as is suggested by an inscription recorded by Wilkinson, which described him as "noblest of the spirits of Heliopolis" (III, 228).

Sopt further had a foothold at Sarabit in Sinai, where his cult is apparent from inscriptions of the XIIth and of the XVIIIth dynasties.

The height of Sarabit in Sinai was the site of one of the old rock-sanctuaries known to us, the existence of which was carried back to the beginnings of Egyptian dynastic history by the finds that were made there in the winter of 1905-6. It was probably much older. The sanctuary consisted originally of a cave, or rather of two caves adjacent to one another, with separate entrances, which lie in a knoll facing a plateau in the midst of wild rocky scenery. The plateau lies some 2,680 feet above sea level, and is difficult of access on all sides, more especially on the north, where the cliffs of the gorges that lead down to the Wady Suweig have sheer falls of several hundred feet in places. The plateau has a wide outlook and is proportionately visible from afar. On its southern and western side it falls away abruptly, exposing the stratum which anciently yielded turquoise. The wish to control access to this turquoise doubtless led to the permanent occupation of the

cave; and we shall probably not be far wrong if we imagine this at a remote period in the possession of a clan, or hereditary priesthood, who, in return for offerings brought to the shrine, gave turquoise, or the permission to work it, inside the appropriated area. Turquoise was prized from the earliest times, as was shown by the beads of turquoise that have come out of the predynastic graves of Egypt which date from the Neolithic Age.

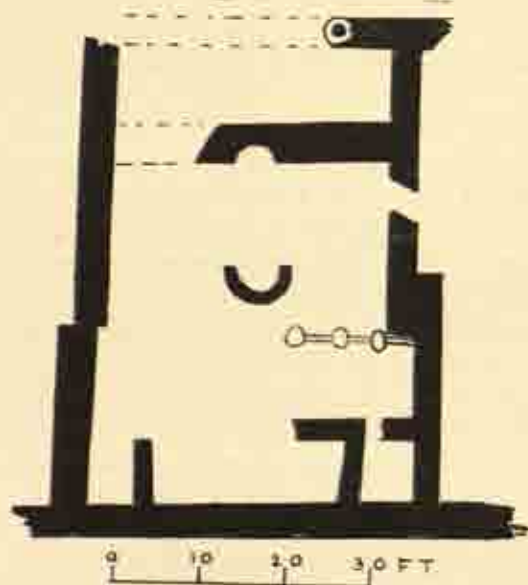
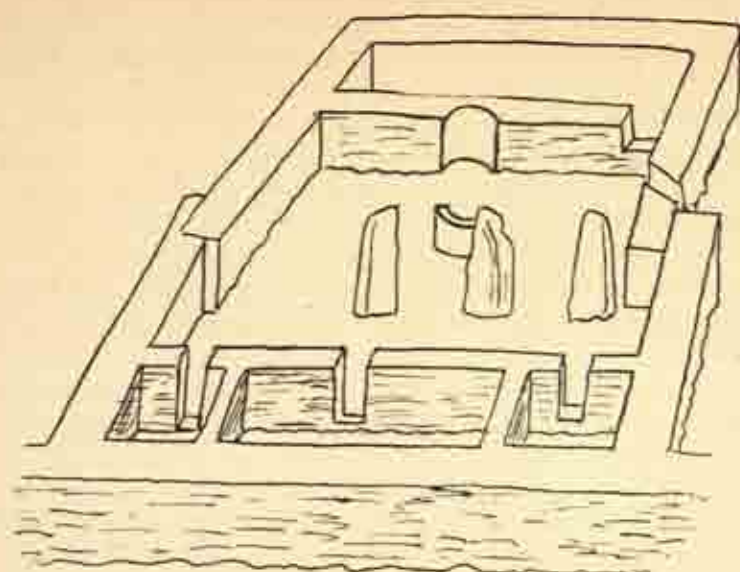
The sanctuary of Sarabit was associated with a female divinity to whom the Egyptians gave the name Hathor of Mafkat, *i.e.*, of turquoise. In the inscriptions in the early Semitic script that were found in the sanctuary, she appears as Ba'alat. The period which witnessed the acceptance by the Egyptians of Hathor as patron saint of Sarabit, witnessed the establishment there also of Sopt, the cult of each divinity being associated with a cave. The larger cave, which always served as a storehouse for offerings, was associated with Hathor. Its walls were covered with figures and inscriptions, and an altar, fashioned on the Egyptian pattern, was placed inside it. The lesser cave, that measured 6 feet by 4 feet, with three steps leading up to a round-headed recess, was associated with Sopt. This cave was without trace of inscription or tablet.

A later age associated Sopt more especially with King Amenemhat III (XII, 6), who sent many mining expeditions into Sinai. The open hall which was erected inside the temenos of the temple, near its north entrance, by Queen Hatshepsut of the XVIIIth dynasty, showed a number of figures on the walls, and among them Sopt who was represented following King Amenemhat. Sopt at the time was accounted the equal of Hathor. At the entrance to a turquoise mine that was opened conjointly by Hatshepsut and her nephew Tahutmes, is Tahutmes offering incense to Hathor, while Hatshepsut is seen offering incense to Sopt. The connection of Sopt with Sarabit, the centre of the turquoise region, explains the words that were put into the lips of the god at the Osiris festival at Denderah, where Sopt addressed the following words to Osiris: "I bring thee turquoise from the city Hatqa. Serene be thy face as thou lookest at it. It is a stone on thy hand, an amulet for thy body" (Brugsch, *Religion und Mythologie*, 1888, p. 567). The amulet of Sopt at the city of Per-Sopt in Goshen was of turquoise also.

The name Sopt is to all appearance of Semitic origin. It is the verbal parallel of the Hebrew *shophet* and the Phoenician *sufet*, a word signifying "judge." In the Bible the word *shophet* was frequently applied to the Divinity. "Shall not the judge (*shophet*) of all the world do right?" (Gen. xviii. 25). "And the heavens shall declare His righteousness, for Elohim is Shophet himself, Saleh" (Psalm I, 7).

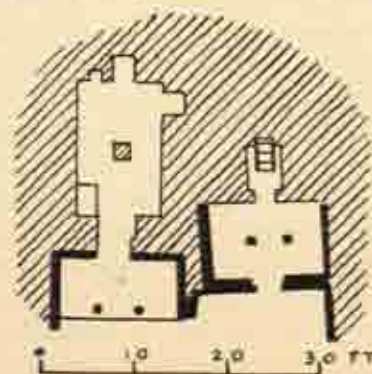
Several place-names in Palestine preserve the name Shophet. There was Sepheth, modern Safed, situated north of the Sea of Galilee, which ranked as a holy city with Jerusalem, Hebron, and Tiberias. Safed occupies a conspicuous position on the summit of a mountain, and was named Tziphath in the Egyptian *Travels of a Mohar* (XIXth dynasty). It is Tsapheth in the Talmud, and Sephet in the Vulgate of Tobit (*circa* 600 B.C.). Eusebius-Jerome mentioned Safed in the *Onomastikon* and described it as "locus Chananaeorum" and as "locus judicans" (ed. Lagarde, p. 43, 180; Murray, *Palestine and Syria*, p. 259).

Tell es-Safi, situated between Jerusalem and Gaza, was probably Gath, one of the five royal cities of the Philistines, where the Ark was placed at one time. It was looked upon as a High Place of burning, and was recently excavated (Bliss and Macalister, *Excavations in Palestine*, 1902, pp. 30 ff.). At a depth of 11 to 21 feet the pre-Israelite level was reached, on which stood several rough uprights



THE HIGH PLACE TELLES SATH, RESTORATION AND PLAN.
BLISS AND MACALISTER, EXCAVATIONS IN PALESTINE.

CAVE OF
HATHOR.



CAVE OF
SODDU.

SHRINES AT SERABIT, PETRIE, RESEARCHES IN SINAI.

or *mazzeba*, which were enclosed in one of several chambers that were built at a slightly higher level. The long wall of the chamber that enclosed the *mazzeba* had a break, roughly in the form of an apse, which was 4 feet 5 inches across, and 2 feet 4½ inches deep. This apse recalls the round headed recess in the cave of Sôpt at Sarabit. In front of the apse of Tell es-Safi, at a distance of a few feet facing it, was a rude semicircle of stone that stood 20 inches high.

In the Hebrew religion the sanctuary was very generally a seat of justice, the *themis*, of which the priests were the administrators, and who, in this capacity, were sacred and were called *Elohim* (Hastings' *Dictionary of the Bible*, article "Sanctuary"). The supposition, therefore, is that Tell es-Safi and Safed in Palestine, and likewise Per-Sôpt in the land of Goshen, and the shrine at Sarabit in Sinai, were centres to which matters of judgment were brought for decision, or where the priest, acting as the mouthpiece of Divinity, gave out the pronouncements. The round apse at Tell es-Safi, and the recess at Sarabit which was raised three steps, were, perhaps, the places occupied by the priest; the low semicircle at Tell es-Safi facing the apse may have been intended for him who sought the judgment.

The connection which is thus established between the shrines of Palestine and Sinai explains the existence at Sarabit of various features which are in keeping with Semitic usage.

Prof. Robertson Smith, in his lectures on early Semitic religion, showed how the barren and unfrequented hill-top would be the natural place chosen for the holocaust, and in this connection cited the proposed sacrifice of Isaac on a mountain. The High Place of Burning was the accepted site of religious cult in Palestine. Tell es-Safi was such a place of burning, and in the history of Samuel we read how he was called upon to sanctify the sacrifice on the height, of which the people would not partake until it had received his blessing (1 Sam. ix. 12). Again, Solomon visited Gibeon where he burnt sacrificial flesh, and offered a thousand burnt offerings on the high altar (1 Kings iii. 3). After the building of the Temple at Jerusalem, efforts were made to draw to it all the offerings, but the High Place continued, and it was only after Captivity (B.C. 770) that it came under the ban of the ceremonial law.

The use made of the plateau of Sarabit in Sinai as a High Place of Burning was known by the excavations. The Egyptians, when they gained a foothold in the place in the XIIth dynasty, erected buildings on the approach to the caves. Beneath the stone floors of these buildings there was found an extensive bed of wood ashes, which extended all across the temple breadth and out as far as the stone walls on the south, in all 50 feet in breadth. Outside the stone floor the ashes would be carried away by wind or rain, beneath it they had remained. In the words of Prof. Flinders Petrie: "We must therefore suppose a bed of ashes at least 100 feet by 50 feet, very probably much wider, and varying from 3 to 18 inches thick, in spite of all denudation that took place before the XVIIIth dynasty. There must be now on the ground about 50 tons of ashes, and these are probably the residue of some hundreds of tons of ashes." *Researches in Sinai*, 1906, p. 99). The ancient area of burning being built over, the holocaust apparently took place outside the temenos on the north side, in a great square recess against the hillside overlooking the Wady Dhaba, which may owe its origin to the quarrying of stone for the temple buildings. The great square was covered with a patch of growing corn in the winter of 1905-6, which pointed to the presence and comparative fertility of the soil.

Another feature peculiar to Semitic usage was the frequent erection of rough stones or *mazzeba* which are found in the uplands of Palestine, and of which we read in the Bible. The sanctuary at Tell es-Safi contained such uprights, the devotional and commemorative character of which is well known.

Thus, in the story of Jacob we read how, coming from Beersheba, he lighted on a certain place that was holy ground, and tarried all night because the sun was set, and took stones to serve him for pillows. He had his wonderful dream, and, on the following morning, he set up the stone on which he had slept, and poured oil on it and called it Bethel, saying: "In the stone that I have set up for a pillar



AMENHOTEP III OFFERING TO SOTH.

Serabit.

XVIIIth dynasty.

[*mazzeba*] shall be God's house" (Gen. xxviii, 22). On a later occasion Jacob made a covenant with Laban, in ratification of which he set up a stone (*mazzeba*), and called his brethren to take stones and make a heap (perhaps an enclosure), and, "they ate and they drank there" (Gen. xxxi, 45). Again, when the Israelites were encamped before the holy mount, Moses set up twelve *mazzeba*, and Joshua did the same after the Israelites crossed the Jordan, placing twelve stones within circles at Gilgal, which remained the place of assembly and worship while Joshua was engaged in warfare.

On the plateau of Sarabit in Sinai, scattered here and there within sight of the ancient place of burning, were a number of rough enclosures made by clearing the ground of stones and piling them together. The enclosures were for the most part 4 to 6 feet inside size, and many contained a stone of larger size that was set up on end on one side of the enclosure and propped up with other stones. There were also some uprights without enclosures. The walls that marked the extent of the temenos were made in the same way, and there was a similar wall across the Wady Umm Agra, the valley that extended south of the sanctuary, as though partitioning this off as a reserved tract of land, or *hima*, as this is known to us in the ancient sanctuaries of Taif in Arabia and elsewhere.

Another Semitic feature was the use of tanks of water for ablution, such as the *apsu* of ancient Babylonia, and the laver that stood between the entrance of the tabernacle and the altar (Exod. xxx, 18). In the Temple of Solomon stood a "molten sea that was round about," and there were, moreover, on the right of the house eastwards ten lavers of brass, five on the right side and five on the left that moved on wheels (1 Kings vii, 23 and 38). The Arab mosque of to-day has a *ghusl*, or place for legal washing outside, and a *wasam*, or circular tank, inside for ablutions.

At Sarabit in Sinai, a rectangular stone tank stood outside the north entrance to the temple area. Inside this, in the centre of a pillared court that was built in the XVIIIth dynasty, stood a circular tank 31 inches across, with a rectangular tank built into the wall of the same court, which was probably older than the building. Another rectangular tank stood in the approach to the lesser cave. The disposition of these tanks was such that the worshipper who approached the Temple on the north side passed the tank at the entrance, and the various tanks inside on his progress to the lesser cave.

LINA ECKENSTEIN.

[The restoration and plan of the shrine at Tell es-Safi are irreconcilable in the work quoted.—ED.]

THE GEOGRAPHY OF THE GODS.

So far but little account has been taken of the manner in which the worship of the gods was distributed in Egypt. Certain gods are well known to belong to some town or district, as Ptah of Memphis, or Khnemu of the Cataracts. Yet often this popular attribution may be misleading if we are studying early times, as a position of a worship may be quite secondary, such as Osiris at Abydos, or Ptah at Thebes. It seems likely, however, that the gods of a particular tribe would have special worship in the regions where that tribe first settled before they mixed with other inhabitants and honoured their gods. Hence a study of the distribution of the worship of the gods promises to throw light on two large problems of the primitive ages: (1) What regions were occupied by the worshippers of certain gods? (2) What gods were worshipped by the same people?

If there is any hesitation whether such a method can lead to distinct results, compare at a glance the distribution in Maps 1 and 2 with that in Maps 5 and 6. In 1 and 2 the worship is limited to the Delta and the Thebaid; in 5 there is little in the Delta and Thebaid, and the majority lie between the two extremes. In 6 there is more in the Thebaid, but the middle region is well supplied, and only one temple is in the Delta. These directly opposite conditions show that there are clear materials for historical study. Firstly, we will consider the facts of the distribution; and, secondly, the relation of these to the general history.

In order to avoid the encumbrance of a great number of maps, sixteen of the principal gods are grouped together here in six maps. Such gods as are similarly distributed in their worship are here placed together, marking their several cities with lettering, sloping backward or forward, or else upright, to distinguish the different gods. It is easy then to grasp at one view all the lettering of one direction. A considerable difficulty in such an enquiry is the uncertainty of the places indicated. On a temple scene, or an altar, is found a mention of a god of some place; but there may be only vague indications otherwise as to where that place lay. The names of the centres of worship have been taken from Lanzoni's *Dizionario di Mitologia Egizia*, with a few additions. Their identification has been done from Brugsch's *Geographical Dictionary* where possible; and often a general indication of a place being in a given Nome has been used, as a more precise locality is not needed in this enquiry. A considerable number of names have been omitted, as there was no clue to their position.

The first great grouping to consider is that in Maps 1 and 2, showing the position of the worship of Ra, Behudet, Mut, Set, and Nebhat. First, we may note that this corroborates the myth that Nebhat was the wife of Set. The distribution of her worship follows that of Set, and is entirely different to that of the Osiris triad. In Map 1 there are places of Behudet and of Mut on the desert roads to the Red Sea, shown here by arrows. What can be the cause in Maps 1 and 2 of this distribution at both ends of the land, and not in the middle? It seems likely to have been due to entering Egypt from the Red Sea, partly across

the desert routes to the upper country, partly by Suez. Confirming this are the worships in the eastern desert and the distribution on the eastern side of the Delta, twelve on the east, four in the centre, and none on the west of the Delta. On the contrary, see Map 4, where the region of Amen-Ra is the west and central Delta, and not the east. We will next consider these gods more in detail.

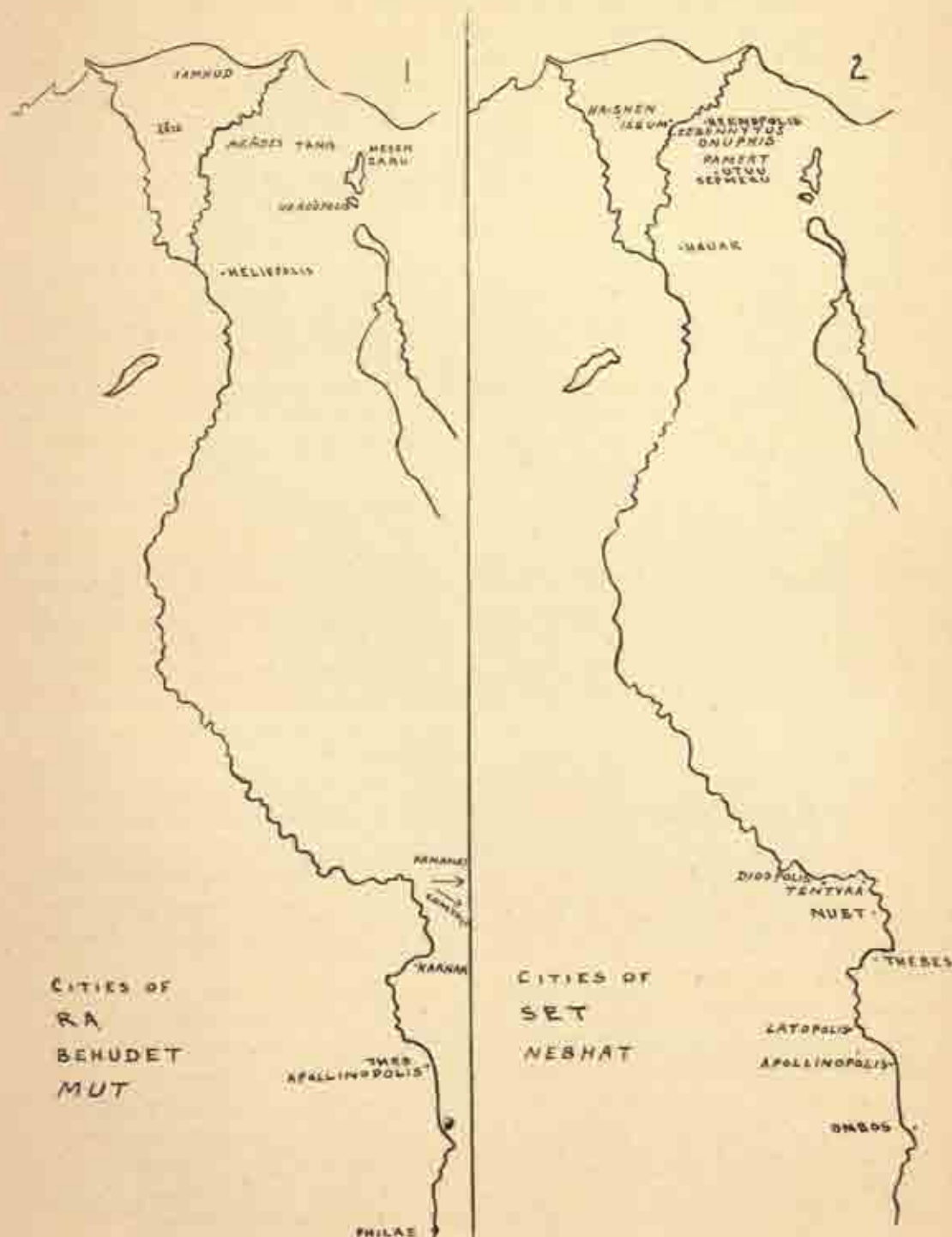
As to Ra, there is only one southern city, and that is Thebes, the city of Behudet, Edfu, where another form of the Sun-god was prominent, and therefore as Ra is only mentioned in a very late text (Denderah), he is probably only secondary. The Ra influence was by far the greatest at Heliopolis, and next to that at Xoïs. It appears to have come in from the north-east.

Behudet, or Hudet, is a god that, from his incessant repetition on buildings, ought to have received more attention. He is clearly a sun-god, and the hawk connection is probably subordinate, due to the wings symbolic of the flight of the sun. Whether the wings are those of the hawk for flight, or of the vulture for protection, is not always clear. For the distinction of hawk and vulture wings in the XVIIIth dynasty, see Naville, *Deir el-Bahari*, Pls. LXVI, LXXXII, and compare the *hudet* in Pl. LVI, where it seems more of the hawk form. Granting that these are hawk wings, yet no hawk head appears; the sun has borrowed wings as an emblem of its movement across the sky, but it is not a hawk-god. Maspero discusses (*Études Myth.*, II, 313) whether the reading is *behudet* or *hudet*, and he is by no means convinced of the "b" reading, and prefers *hudet*. Neither he nor other writers have adduced what seems a clear connection of the latter form. This is the Hebrew, חֹד, *huhd*, "splendour, glory, majesty, or honour." Such would be a likely appellation for the glory or majesty of the winged sun, and for its figure placed over the doorways. This Hudet is the god who is accompanied by the metal-workers, *mesnitu*, whose forge, *mesen*, was in the temple of Edfu, and at Zaru in the north. Other forges are stated to have been at Herakleopolis, but no Hudet of that city is mentioned (see Maspero, *Études*, II, 313-317). These *mesnitu* were the army of Horus against Set. The god Hudet, or Behudet, appears, therefore, to have come into Egypt by the Berenice-Koptos road, on which Compasî retained the name of Qembaus where he was worshipped. He became established as the great god of Apollinopolis or Edfu. He also entered by the north and was established in the frontier town of Zaru and the neighbouring city of Tanis. The mixture of the splendour of the flying sun with the animal hawk-worship of the aborigines, and with the Horus-worship of the other tribes, is a later confusion.

Mut, the mother-goddess, would not be expected to appear in this connection, as she is so regularly associated with Amen in later times. Yet the distribution of the cities of Mut is distinctly of the eastern type, while that of Amen, Map 4, is western. Her entry by the south is indicated by the worship of Mut along the Hamamat road, and her greatest temple of all was at Karnak, from which she is usually called Mut lady of Asher. Then there is no evidence northwards of her worship until the eastern road into the Delta, where she was worshipped at Heroopolis; apparently at Mendes, if *ab* (horns) *neteru* is equivalent to *ap* (horns) *neterui*; and certainly at Samhud in the central Delta, where she had a temple. Thus she clearly comes in from the Red Sea side and not from the west. The name of Samhud is also a link with the worship of Hudet, as it is "united to Hudet."

Set has the character of an early god, preceding the entry of Horus Behudet, who warred against him. He was certainly brought into Upper Egypt by the Desert road, as he had there two centres of the first class—Nubt, opposite the Desert

road, and Ombos; he also was worshipped at Thebes. He was brought in by the Red Sea way to the eastern Delta, where he appears as the god of the Pharaethite Nome, as worshipped at Utuu in that Nome, and at Sapmeru, which may be Mert in the same Nome. North of this he appears as of Hermopolis; and that this is the Delta Hermopolis is shown by another place of his worship, Per-nehem, the



CENTRES OF WORSHIP OF THE GODS IN EGYPT.

goddess Nehemaui being of the Delta Nome. His great centre was that established later by the Hyksos at Haur, or Auaris, which appears to be the camp at Tell el-Yahudiyyeh. Thus, though early, Set is by no means aboriginal, but has been brought in at the opposite ends of the land, and was not recognised between.

Nebhat has closely the same distribution of worship as Set. Her centres were near Nubt, and between Thebes and Ombos. In the Delta her worship was at Per-mert, in the Pharaohite Nome, and Onuphis probably north of that; also in the middle Delta at Iseum and Hat-shen in the Sixth Nome. Thus, her position is unlike that of the Osiris-Isis family, who appear in the western Delta and all along the Nile course. This certainly points to her having a similar source to that of Set, and not being originally in the Osiride family.

In Map 3 the Osiride triad are placed together, as there is little difference in the distribution of their worship. Osiris was eventually worshipped in every Nome, but it would have been useless to mark the whole country, so the names here are of those cities which held the greater relics of Osiris, presumably those places which principally worshipped him in early times. The distribution is very general, covering all parts of the Delta and a fair amount of the middle country. In Nubia, Horus alone seems to have been worshipped, perhaps identified with an aboriginal god. The general view of the Osiride triad is that of a settlement so early in the land that the worship was generally diffused.

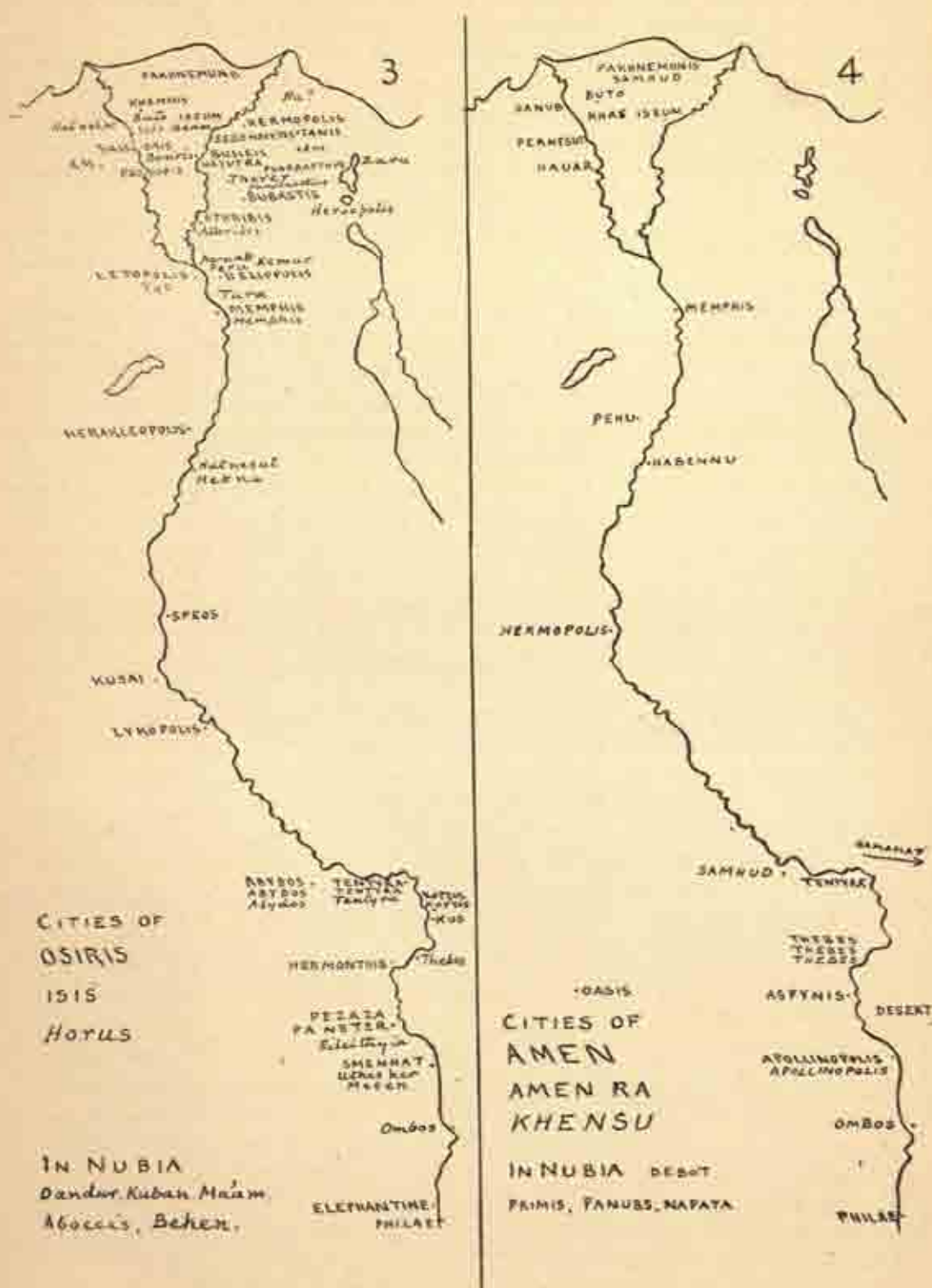
Amen, and his later form Amen-Ra, are somewhat different in their distribution, Map 4. They were entirely ignored in the eastern Delta, but in the central and western Delta had a firm hold. It does not seem as if their worship was due to the influence of the XIXth dynasty, for in that age the eastern Delta was the most developed. The earlier form, Amen only, is limited to the Thebaid proper, between Denderah and Philae. The presence of Amen Ra as the great god of the Oasis, and the late importance of Zeus Ammon in Cyrenaica, point to Amen having been brought into Egypt from the west.

Khensu has a more Egyptian connection, belonging to the Thebaid down to Hermopolis, but never below that. This would point to his having come from the Red Sea, or else being a really indigenous god of the South, apart from the eastern and western influences, which took full effect in the Delta.

We now turn to some gods the worship of which seems to have been very early, and without retaining any traces of its source or introduction. In Map 5 are the cities of Tehuti and Anup, which are similar in their distribution, scattered equally all down the country, and without any prominence in the Delta. It is, however, only Tehuti whose worship entered Nubia. The position of Hesperet is here placed at El-Asirat, as it is known to be in this region. But it has been compared with Hisoris, which is placed north of Ptolemais in the *Antonine Itinerary*, that is perhaps twenty miles north of Asirat. It is perhaps doubtful whether Lykopolis should be credited to Anup at all, as the whole jackal-worship there may be due to Upuat. There is, however, the distinct mention of "Anup lord of Sayut." The position of Anup altogether seems to be that of an indigenous god of the dead as a part of the aboriginal animal-worship, and it is only by quite artificial myths that he is brought into connection with later forms of the religion.

Other gods of an early type are noted in Map 6. Khnem, the creator-god, was worshipped along the whole country from Nubia down to the Sethroite Nome. His worship long preceded that of Ptah as creator, which was restricted to four Delta cities—Memphis, Bubastis, Letopolis, and Mendes. Beside these Ptah only appears as an artificial intrusion at Thebes and in Nubia, perhaps due to the

importance of the army corps of Ptah. Thus Ptah appears to have come late into Egypt and from the eastern side, while Khnem is the aboriginal god, probably formed from the primitive animal-worship of the parent ram.



Shu and his consort Tefnut have much the same range. They belong mainly to the South, and only Tefnut once appears in the Delta, where she is placed at Rehu in the Hermopolite Nome (de Rougé, *Geographie*, 107). They seem to belong to a very primitive stage of the native cosmogony next after the animal-gods. Their human nature was not constant, as they were often figured as lions. Shu was evidently space which separates heaven from earth, and Tefnut seems to have been the moisture of space; these preceded the earth and sky which they formed.

We will now notice other gods which are so seldom localised that it is useless to map them.

Sekhmet appears at Bigeh by the Cataract, at Karnak, at Memphis, and Letopolis, and once in the Delta at Mansura (*zart*). She is said to be the chief over the Tahennu, pointing to a Libyan origin. It is difficult to see any link between her and Ptah, with whom she is associated at Memphis.

Min only appears close to the Hamamat region whence he entered Egypt. Koptos was his primitive Nome, and from thence he passed seventy miles up and down stream to Edfu and Panopolis; he also occurs at Denderah, close to Koptos. Once he appears connected with Saqqara, and once with Nubia, but practically he is centred on the Desert road by which he was brought in, his mother being named Khenti-abti, "the leader of the East."

Hathor was very widely worshipped, with equal distribution from the Cataract down to the sea; also in Sinai and Byblos. The regular diffusion implies either a very early basis, or else state worship which spread irrespective of ancestral habit. The latter seems to have been the case here, as Narmer has heads of Hathor on his waist cloth, and Pepy repeats the Hathor head along a dado on his work. The regularity with which Hathor is associated with other gods in most of the Nomes, and is used as a secondary name of Isis, all points to a general worship by the dynastic people. Sebek was mainly worshipped in the Fayum, at Ombos and at Silsilah. There are also references to the crocodile-worship at *tep ant* (a cave near Memphis), at Bekhat (Sinai), at Thebes, at Athribis, and in the Metelike Nome. The worship was part of the primitive animal cult, but seems to have generally been at places where crocodiles were prominent. There does not seem to be a centre of worship corresponding with the great crocodile mummy pit at Ma'abdeh.

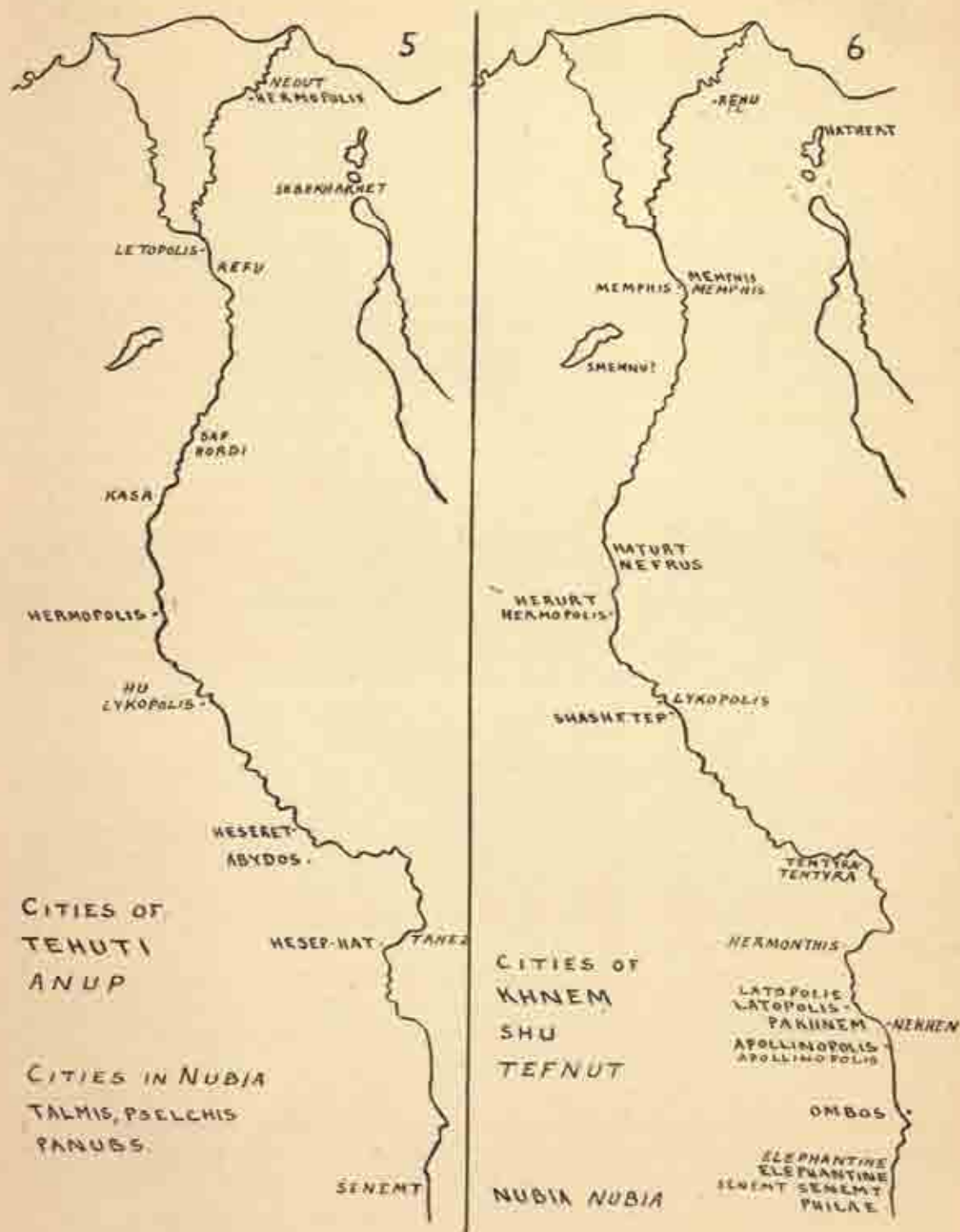
Mentu was the local god of Hermonthis; from there his worship spread south to Edfu and Elephantine, and north to Medamot and Denderah, with—strange to say—an extension to the Wady Natrun. Though often mentioned in figures of speech in the New Kingdom, yet the worship was practically limited to the strict Thebaid.

Anher belonged originally to Thinis, but also was connected with the central Delta, at Sebennytyos, and the XVIIth Nome, north of that; also in Upper Nubia. These centres seem to be only due to political movement.

Neit, on the contrary, belongs essentially to the Delta, especially Sais. She also is named with Athribis, Sebennytyos, and Pa-nezer in the eastern Delta. Probably by political influence she appears at Esneh. While much noticed in names and priesthods from the 1st to the Vth dynasties, after that she almost disappears until the great revival by the XXVth dynasty at Sais.

Geb, though so fundamental a deity, was not localised beyond Memphis and the cultivation of Heliopolis, except in the very late temple of Ombos.

Similarly Atmu was closely localised to Heliopolis and Pithom. Sati was only recognised at the Cataracts—Syene, Elephantine, and Bigeh. Thanen was only worshipped at Hermionthis, and Dudu at Esneh. All of these then were entirely local gods, like special forms of Horus, and were not national except so far as they had been provided with a resting place in the general mythology.



CENTERS OF WORSHIP OF THE GODS IN EGYPT.

Of course in every age the god of the capital of the dynasty had the more general acceptance in the rest of the country, but seldom was called after other places, or had temples erected as new foundations.

From these positions of the worship of the gods we gain a fresh light on their relations and origins. Let us look first at those which, by their wide distribution, appear to be the earliest.

The gods which belong to the whole country, are Tehuti, Anup, Khnem, and Sebek. All of these are entirely animal-gods—the ibis, the jackal, the ram, and the crocodile, or else are, at least, represented with animal heads. They belong, therefore, by their nature to the earliest class of the gods before the Osiris triad. Now it has been already pointed out that the Ra myth has features even older than the second prehistoric civilisation (ANCIENT EGYPT, 1914, 21), and that the Osiris worship cannot therefore be put later than the first civilisation, thus according with the tradition that Osiris led the Egyptians from savagery. Accordingly, the earliest animal-gods must belong to the age before the settled civilisation and the earliest graves, to a condition like that of nomad savages, such as the Australians or Tasmanians. The nature of the animal-gods of such a people throws much light on their mental state. The protection of the dead by the jackal shows that the corpse was not disregarded, but was placed apart; or perhaps the jackal was allowed to eat the flesh, similar to birds being allowed to eat the bodies of the Parsis at present. The moon was the most attractive thing in nature to them, as Tehuti is the Moon-god, "he who is the moon," and Zehu, or Zehut, as a name for the moon is indicated by the words *zhat*, "the white metal, lead." This may be connected with *ṯṯ*, *ṯṯḥ*, "white, shining, or clear."

It is very notable that there is no sign of Ra being a primitive god; the worship of the flying sun, *hudet*, was only in the South and the Delta; the worship of Ra was originally only in Heliopolis. The Moon-god Tehuti was worshipped at sites along Upper Egypt, and had his second great centre at Hermopolis of the Delta. This is quite in accord with the ideas of the nomad Arabs, to whom the moon was a deity far more important than the sun. To a people who do not depend on cultivation, and see the need of sunshine to ripen crops, who live in a hot climate and do not seek the sun for warmth, to such the moon, lighting the night for hunting and wandering, is the more important light. From being the Moon-god, Tehuti naturally became the god of recording time by the revolutions of the moon, the primitive man's calendar. The month takes precedence of the year as a register in Arabia and various other countries; the solar year was fitted on to the months, and lengthened or shortened to fit them as might happen, leading to utter confusion in the Greek and Roman calendars. Thus the moon, the month, and the Moon-god claim attention before the sun and the year. The Moon-god becomes the measurer of time, hence he is the recorder, and hence the god of writing and of all learning.

The primitive animal-worship of the ram indicates that the savage Egyptian already recognised the essential action of the male, and this suggests that cattle-keeping may have been already practised for such a conclusion to have been observed. The name of Khnem was perhaps subsequent to the adoption of the worship. It appears to start from *khnen*, "to join," and hence to construct or build, much as we now speak of a carpenter and joiner, and of construction in wood as joinery. From construction it is natural for the word to be applied to creation, as we speak of the "Architect of the Universe." Hence the creative Ram-god had

the name of the Constructor or Creator. Later, when a human figure was adopted with a ram's head, the idea of construction was passed on to wheel-made pottery, which was unknown before the dynasties; then Khnem was figured as modelling men upon the potter's wheel.

Sebek, the crocodile, must have been a terror to be propitiated so soon as the pluvial period ceased in Egypt. No water could be obtained except from the Nile; and the Nile then was not the clear open channel that we know; it was a morass stretching across the valley, full of reeds along the shoaly banks, giving plenty of cover to the crocodile and hippopotamus. Whenever water was fetched from the river, or anyone went down to drink, the dread of the crocodiles' jaws was before them. Sebek was the one great evil power which must be propitiated before anything.

Thus the gods that are linked with the life of the savage Egyptian are: the regulating moon, the creative ram, the jackal for the dead, and the crocodile terror of the living.

The gods that belong more to the southerners are Shu and Tefnut. These belong to a later stratum than the preceding, as they are more abstract—space and moisture—and they are frequently of human form. Yet they were also figured as two foreparts of lions joined; or separately, Tefnut has often the head of a lioness and Shu is human. As they are not special gods of any one place, and are connected with the very early mythology of Nut and Geb, they appear to belong to a primitive period.

A later Moon-god was Khensu, who was also a southern god from Hermopolis to Ombos. His name refers, not to the whiteness of the moon, nor its time regulating, but to the gliding of the moon across the sky, sailing in its boat on the heavenly ocean. The root is *khens*, "to travel," or "pass through," and Khensu is "the traveller." The god is always represented with the crescent moon, or rarely, the disk alone. A curious feature is the compounding of Khensu with other gods, Khensu-Ra of Thebes, Khensu-Hor of Ombos, Khensu-Shu of Thebes, Khensu-Tehuti of Edfu and Hermopolis. These show that Khensu does not belong to the people who worshipped Ra, Horus or Tehuti. This excludes the animal-gods, the Osiris and the Ra worshippers—all the principal groups. As a purely human god Khensu belongs to rather a late stage in the mixture, and to a moon-worshipping people apart from the Old Egyptians. His position from Hermopolis to Ombos shows that he came in from the Red Sea side, or perhaps from Nubia. An Arabic source seems thus to be indicated.

The Osiride triad evidently belong together, by the similar diffusion of their worship, while other gods who were associated with this group are marked off by a different distribution, thus pointing to Set, Nebhat, and Anup as being really extraneous, and only incorporated in the family by tribal alliance. The diffusion along the whole country, and especially that on the west of the Delta, agrees with the western source of the triad. The chain of oases from the coast, the Wady Natrun, el-Bahrieh, Farafreh, el-Khargeh, and Kurkur, all served as stepping-stones for western tribes to pass into the Nile Valley along its length. The connection of Asar with the Libyan *Ausar*, *User*, "old man," has long been noticed; it may be added that Hor or Horus may likewise come from the Libyan *Arau*, "a child."

Amen was a god whose worship was rather similarly diffused, but not between Habennu and Tentyra. This distribution implies that the entry of Amen from his special Oasis of Siwah was by the Fayum and the Coast road; while the southern worship came in from the Oasis of Khargeh where Amen was also worshipped. The

Amen-worship certainly came in much later than the Osiris-worship. It has been supposed that the Amen-worship came from Ethiopia, but we know that it belonged to Thebes, in the Middle Kingdom, while there is no trace of Ethiopian civilisation till the New Kingdom, and no influence on Egypt till the XXVth dynasty. If the worship were of southern origin it would be very unlikely that most of the centres of it should be in the central and western Delta. The much nearer sources of the oases are far more likely. The presumption is that Amen belonged to some later occupants of the Libyan region, who came in subsequently to the Osiris worshippers.

In connection with Libya we should note Sekhmet being called chief of the Tahennu, as connected with her worship in the Delta and at the Cataract. There seems good ground for what is known as the "C" type of burials south of the Cataract being of a Libyan tribe (see Bates, *Eastern Libyans*, 245-252; *ANCIENT EGYPT*, 1914, 183). Hence it is reasonable to see in Sekhmet the goddess of these people, who were mainly in the Delta but also settled between the First and Second Cataracts. Her worship at Karnak would agree with the western importation of Amen there. She is, however, never associated with Amen, and belongs to a different and earlier stratum, associated with Ra.

Next turn to the entirely different type of distribution, that found only in the Delta and the South, or in one of these only. When it is in the Eastern Delta only, the importation from Asia is probable. When only in the South, importation from Nubia. When in both the Delta and the South, omitting most of the Nile Valley between those parts, then importation from the Red Sea by Suez and Koptos is the more probable course.

The only original centre of Ra-worship is Heliopolis, and the southern centre of Edfu is only due to a secondary identification of Ra with Hudet. It seems then by its position that this worship came across from Syria, like the later form of Heliopolitan sun-worship of the Aten or Aton, the Syrian Adon, or Lord. The obelisk was the special emblem of sun-worship, as the obelisk-temples of Ra in the Vth dynasty, and the obelisk of Heliopolis. The pair of obelisks before an Egyptian temple are the parallel of Jachin and Boaz before the temple of Solomon, the two pillars shown before the Syrian temples on coins and gems, and those described by Lucian at the gate of the temple of the Syrian goddess. The ascent of such a column, and sojourn there to commune with the god, stated by Lucian to have lasted for seven days, was carried on extravagantly into Christianity by St. Simon Stylites. The nature and the later name of the worship—Aten—therefore bear out the origin inferred from its position in Egypt.

The Hudet worship, of the flying sun with wings, centred at Edfu. Arising so far south suggests that it came by the Berenice road, which led into the Nile Valley opposite Edfu, passing the desert temple of Redesieh. Hence it is to the Red Sea or Arabia that we should look for its origin. A Semitic source is suggested by the Hebrew *huld*, "splendour," which seems likely to be the source of the Egyptian name. As we have noticed, it was from Edfu that the historic myth describes Horus as going to found the Samhud cities of Middle and Northern Egypt, "united with Hudet." There is thus no question as to the starting of the worship from Edfu.

Min is another god who certainly came in from the Red Sea, but by the Koptos road, along which he was especially adored, and from which his worship spread up and down the Nile. Not only was his mother Khenti-abti, "the leader of the East," but the detail of the shrine associated with Min is well shown

(*Athribis*, 8, Pl. XX) as a conical hut, like those of the land of Punt, and it is stated (on Pl. XVIII) to be a building of Punt. Hence Min was derived from Punt, the modern Yemen, or else Eritrea.






Three gods have very closely the same distribution in North and South, and being on the east and not the west of the Delta they must be supposed to have come from the Red Sea: two of them are connected, Set and Nebhat, but the third, Mut, seems to be quite apart. That Set is closely similar to Sutekh there can be no question. Set was the god of the desert, and Sutekh was the god of the Hyksos desert-dwellers. As the Hyksos were eastern, and probably Semitic, so Set must have had a like origin. The second prehistoric civilisation, which came from the east, is therefore probably the source of this worship. The attack of Set on Osiris is the account of the second civilisation attacking the worship of the previous age. The conquest of Set by Horus of Edfu is the account of the subduing of the easterners of the second civilisation, by the reviving strength of the westerners of the Osiris group. If Set is thus connected with the second race, who seem by their productions to have come down from the eastern mountains, may not the steps which he guards, leading up to the sky, be the ascent of those mountains? Though they are not quite as high as Parnassus or Olympus, they might likewise be looked on as the dwelling of the gods, and the ascent be therefore the steps up to heaven. The regular title of Set, Nubti, may refer to the verb *nub*, "to fashion, or model"; thus Set would be the Creator, like Khnem or Ptah, fashioning mankind. The rival, Horus, then similarly was entitled Hor Nubti, Horus the creator, taking away the old title of Set. The position of Nebhat as wife of Set is strongly supported by the distribution of her worship being the same as that of Set. This serves to show that her place in the Osiris group is a secondary adaptation of the mythology, and that primarily she came in from the Red Sea with Set. Mut, the mother-god, is shown by the distribution of the worship, to have had a similar history. The name is purely Egyptian, and probably, therefore, a translation of the name in the original country of the goddess.

The general diffusion of the worship of Hathor, and her identification with many other deities or genii, points to her belonging to the dynastic people, as already stated. The movement of the dynastic people appears to have been by sea, round from the Persian Gulf and up the Red Sea into Egypt (*ANCIENT EGYPT*, 1917, 34, 36). Hence it is reasonable to connect their goddess Hathor with the West Arabian goddess Athirat, who was probably the Ashtoreth of Canaan. In Arabia she was the wife of the Moon-god; but among races where the moon was feminine she became the Moon-god, wearing the disk of the moon in Egypt with the horns of Ashtoreth Karnaim—"the horned"—as emblem of the crescent moon.

The geography of the worship of the gods is thus seen to have a considerable value historically, as bearing on their origins and connections. When more complete research into the localities of various uncertain names may extend our identifications, it will be possible to get more light on the sources of Egyptian mythology.

W. M. FLINDERS PETRIE.



A STATUETTE OF KHONSU.

THE statuette which is here reproduced represents the god Khonsu in mummified form, standing up, holding the whip in his right hand and the crook in the left, while with both hands he grasps a sceptre composed of  and , the  being also held in the left hand. He wears the side-lock of youth, and on the top of the head is the depression in which was originally fixed the lunar disk and crescent. The work is of bronze, which has suffered to some extent from oxidation. The wrappings of the body are covered with an elaborate design in electrum, the eyes, eye-brows, beard, headdress, collar, and bracelets being picked out in gold. The god stands upon two plinths; steps have been cut in the front of the smaller and its sides are decorated with a repetition of the signs  in electrum, while the upper surface and sides of the larger bear an inscription. In its actual state, after the loss of the lunar disk, the work stands 2½ inches high; the inscribed plinth measures 1½ inch by ½ inch. It is a very fine specimen of Saïte craftsmanship, if, indeed, it does not date from an earlier period. A point of special interest is the unusual position of the head of the . If the figures of gods in, *eg.*, the Cairo collection (Daressy, *Statues de divinités*) are examined, it will be observed that the *side* of the head generally faces the spectator, whereas in the specimen here figured we see the front. Among the few instances of the latter arrangement at Cairo are three statuettes of Ptah 38,445, 38,449, and 38,453). In the two former the top of the sceptre joins the lower part of the beard; in the third, as in our specimen, it is under the beard.

On the upper surface of the plinth, facing the god, are three columns of hieroglyphs:—



"Khonsu in Thebes, Nefer-hetep."

On the front of the plinth, and evidently intended to be read with the above, is  with  on either side, "His name which he loves." Along the sides of the plinth, meeting at the back, run two lines of inscription:—



"May he reward Uana-ur, son of Pen-Ptah, for what he has done."



"May he protect Uaua-ur, born of Mukhiy, from all evil."



GOLD-INLAVED STATUETTE OF KHONSU.
Enlarged to double size.

The inscription is quite an exceptional one, and very different from the prayers for life, health, and strength which such figures usually bear. A rather long inscription on a statue of Ta-urt at Cairo (39,147) includes a phrase similar in sense but expressed in other words.

The figure is the property of Messrs. Spink and Son, who have kindly allowed me to publish it.

F. W. READ.

NEW PARTICULARS CONCERNING THE PRAEFECTI AEGYPTI.

THE twelfth volume of the Oxyrhynchus Papyri furnishes a good deal of fresh evidence concerning the Praefecti Aegypti, because of the numerous references in its texts, in distinctly dated documents, to prefects already known; and also because these restore to history some half-dozen or more new names and their periods of office for prefects and vice-prefects. The new material mostly relates to prefects of the second and third centuries, and therefore the following remarks will chiefly be concerned with the Imperial governors during those periods.

Upon the commencement of the discoveries of papyri of the Roman era, the succession of the prefects was discussed by Milne, Offord and De Ricci, but has since been much more completely worked out by Cantarelli, whose treatise is well known to all papyrologists. The matter has also been studied by Dattari, whose erudition as a numismatist is well known, with the intention of publishing a "*Cronologia dei Prefetti D'Egitto*," and I am indebted to him for a copy of his tabular arrangement of the prefects made some four years ago, before the appearance of the last two volumes of the Oxyrhynchus Papyri and two parts of the Florence Papyri, and several volumes of the Berlin *Griechische Urkunden*.

Papyrus 1547 gives a document dated in A.D. 119, as engrossed under the regime of Quintus Ramnius Martialis, for whom we previously had an inscription of A.D. 118. Between this date and A.D. 131, only one prefect's name was derivable from previously published papyri. Dattari, however, in this gap, probably from information from coins, placed a Marcus Moesianus and a Claudius Julius. Nothing corroborating their position as prefects appears in these new papyri.

Papyrus 1451 decides that A.D. 175 was one of the years of office of Gaius (Flavius) Calvisius Statianus. The praenomen given him by Dio Cassius is omitted in the manuscript. His name has been found in an inscription at Verona; see *Cor. Ins. Lat.*, V, 3336. Between this prefect and T (or L) Pactumeius Magnus, Dattari places a Claudius Julianus, but does not say upon what evidence.

We now arrive at one of the entirely new names, that of (Lucius) Baebus Aurelius Juncinus, for the years A.D. 210 to 214—years to which Dattari assigns M. Duca Fluminianus—excepting that the cognomen Juncinus appeared upon a papyrus now at Giessen.

In their comments concerning prefects of this period, Drs. Grenfell and Hunt mention that, for the year A.D. 241, a Strasburg papyrus gives a name Annianus.

The date of A.D. 245 is now provided for Valerius Firmus, for whom an Amherst papyrus also gave 246 or 247.

A Florence papyrus appears to assign Aurelius Basileus to A.D. 245.

Ox. Papyrus 1468 gives a fresh name, Titianus Claudianus, who was in office subsequent to A.D. 230, but before 258. He may have only been a vice-prefect.

Lucius Mussius Aemilianus, deputy prefect of Papyrus 1468 of A.D. 258, also to be found in Ox. Papyrus 1201, appears to be identical with De Ricci's "Marcus Julius (?) Aemilianus." In a Rylands papyrus he is styled praef(ectus). Another Rylands papyrus, Dr. Grenfell mentions, gives a prefect *Καυσάσιος* for the thirteenth year of Gallienus.

If L. M. Aemilianus was prefect in A.D. 258, he clashes with M. Marcus Brundisianus, whom Dattari, on the authority of Botti, places in that year.

Papyrus 1467 contains a petition to a prefect whose name is missing. It is of the year A.D. 263, and the editors suggest the prefect was Aurelius Theodotus, known to us from a Strasburg papyrus. This name was given by Cantarelli.

In a previous volume of the *Oxyrhynchus Texts* IX, Papyrus 1191 introduced a prefect for A.D. 280 to 281, whose name, Hadrianus Sallustius, is to be found in Amherst Papyrus 137.

Another new name is Marcus Aurelius Diogenes, A.D. 284 to 286, Papyrus 1456, successor to Pomponius Januarianus, Ox. Papyrus 1115, but previous to Flavius Valerius Pompeianus, who held office in 287.

In A.D. 298, Papyrus 1469 presents a fresh name, that of Aemilius Rusticianus, a deputy prefect. The text terms him, "the most illustrious deputy in the most eminent office of prefect."

In the following year Papyrus 1416 gives (Aelius) Publius, whom Ox. Papyrus 1204, had already revealed to us.

Papyrus 1558 presents a new prefect name, that of Fl. Julius Ammonius; he is entitled prefect of Augustamnica, and so must be dated subsequent to A.D. 341, when the districts in the neighbourhood of Memphis and Babylon took that name. One of the new documents is a letter from a high official named Nikon, who may have been a prefect, but the editors, from further information in a Leipzig papyrus, think he was a Praeses.

Cantarelli was able, from references to him in the work of St. Athanasius, to place a Philagrius as prefect A.D. 334 to 336. His name occurs now twice in Ox. Papyrus 1470, and so is certified by this new form of historical evidence.

A prefect, F. Entolmius Tatianus, in power from A.D. 367 to 370, was only known from Suidas and Photius, but he is mentioned in Ox. Papyrus 1101. According to the *Chronicle Puteanum*, he continued in office for a second time up to A.D. 373. See also John of Nikiu c. 82, and Cod. Theod. XII, 18, 1. According to the *Egyptian Gazette* the name of a prefect Urulius Genus has been found in the Roman forum at Luqсор.

JOSEPH OFFORD,

PERIODICALS.

Annales du Service des Antiquités de l'Égypte. Tome XV. Fasc. iii.

(Continued from ANCIENT EGYPT, 1916, p. 39.)

AHMED BEY KAMAL.—*Le Tombeau nouveau de Mêr.* This is a description of a finely decorated tomb of Pepy-onkh-her-ab, and copy of the inscriptions, occupying fifty pages. The burial had been anciently destroyed and the coffin broken, but much was left of the funeral furniture. The scenes, inscriptions and lists are of the same character as those of other tombs at Meir and Deshasheh, and we may hope that soon Mr. Blackman will be able to continue his work and copy this uninjured tomb as carefully as he has done others. In the burial pit of Pepy-onkh-her-ab there was much pottery, food offerings, copper saucers containing bread, and seven alabaster vases. In the pit of his wife Aoh-hat was a mirror, arms of a wooden statuette, two flint knives, two alabaster vases, a very rare copper kohl-pot and stick, five model axes, seven knives, seven adzes, seven chisels, eight other tools of copper, etc. In the serdab was a group of two figures of the owner and wife seated, carved in limestone about life size, without inscription.

DARESSY, G.—*Un Monument du temps des Hyksos.* This is a block of limestone found by Prof. Naville at Tell Maskhuta, and supposed to be of the XXth dynasty. M. Daressy detects that it is a much older monument, which has been recut with later details under Sety I. It is suggested that it was carved in the XIIIth dynasty, and represented a king warring on the incoming Hyksos. The original god figured was Hor-Sopdu.

LEGRAIN, G.—*Le premier Prophète d'Amon, Ap-ouaitou-mes.* Four fragments of a wooden box from Thebes bear the name of the hereditary prince, chief prophet of Amen over all the prophets of Thebes, Upuatmes. This is probably about the time of Amenhetep III.

LEGRAIN, G.—*La Litanie de Onasit.* This text from the south-east of the hypostyle hall of Karnak is compared with a duplicate of Ramessu III, and here published in parallel columns. The goddess Uast is Hathor of Thebes, and it is stated that all the goddesses beseech her to be favourable; the goddesses are named in geographical order from the Cataract down to Heliopolis.

LEGRAIN, G.—*Les déesse Shahdidiyt.* This goddess is known in five personal names, but not from other sources; the type of name seems to be foreign. The names are on a squatting statue in diorite of Pedashahdidiyt (Posno); a steatite statuette of P-sa-na-mut son of Pedashahthetthet (Naples); a figure of Khonsu dedicated by Pedashahthetht son of Horuza (Cairo); a stele of Pedashahthetht

son of Hor (Louvre); and an ushabti of Pakhadad son of Tashadyd (Vatican). It seems not impossible that the first four are all of one man. It appears likely that this is the Arabic *shadyd*, "intense, mighty," the mighty goddess? The root is an early one, as in Hebrew *El-Shaddai*, the Almighty; *shiddah*, "a mistress."

Tome XVI.

DARESSY, G.—*La Statue d'un Astronome*. This is a black granite statue, twenty-five inches high, from Tell Ferain, otherwise known as Nebesheh. Down the back pier are three columns of inscription, of which a few signs are missing at the bottom, where the feet are broken away. The text ends in two columns on the flat surface behind the left leg. As the text is unique in subject, the whole of M. Daressy's rendering is here quoted:—

"The heir and prince, sole friend, versed in science, observer of all phenomena, celestial and terrestrial, skillful for observing the stars without neglecting half of them, tracing a horoscope based on their positions and the gods who rule destiny; having been instructed about them and their days, about the influence that Venus has on the earth, he makes glad the land by his predictions. Observing every culmination in the sky, knowing the rising of (he indicates) every feast at its right time; announcing the rising of Sirius at the beginning of the year, he observes the day of its feast; having calculated its coming at the epochs assigned, observing all that it does every day, all that it regulates is known to him. Knowing the northing and the southing of the Aten, he measures all its variations, he uses them to show the hour by the sun, determining their coming at their moment, and the hourly changes in the time of obscurity. The movement of the star of Horus in the sky perceiving the things of the master, that which he observes in the sky he applies to the earth. Knowing their breath No objector rose up against his decision after he had decided a matter according to all that he observed, no master could reverse one of his counsels to the Lord of the Two Lands. Subduing the scorpions, knowing the retreat of reptiles, showing their place and extracting their serpents, shutting the mouth of their inhabitants, their serpents initiated in the mysteries, favouring his travels and protecting his ways, mastering the adversaries of his expedition making him happy by his counsel, god making his love as the master of the scorpion, Horkhebt, son of the devoted to Uazet" Thus Horkhebt was astronomer, astrologer, regulator of the calendar, magician and councillor.

CLÉDAT, JEAN.—*Fouilles à Khirbet el-Flouisyeh*. This site is the ancient Ostracine, at the eastern extremity of the Serbonian lake, Sebkhah Bardowil, rather more than halfway from the Suez Canal to Gaza. The ruins are in a marshy plain, inaccessible during much of the year, like Pelusium, showing how the sinking of the Delta coast extends toward Syria. Nothing is known here before the Roman period; the place was best known in Byzantine times, and until 1302, when it was finally ruined by an earthquake. Two churches and a fortress were excavated by M. Clédat. The buildings are all of cut stone, and burnt brick is very unusual: the crude brick building is Arab. The fortress is an irregular pentagon, about 800 feet across. The wall is 6 feet thick, built of a hard concrete of flints, chips, plaster, and sand, faced with cut stone. The facing blocks are some as much as 3 feet long, and the courses usually 16 inches, in regular lines. Beams of timber are laid through the mass to strengthen it. The walls of the

churches are similar, but those of the private houses, being only 15 or 20 inches thick, are simply of two facing stones filled in with plaster, with some headers to bond it. In the fortress the sand has blown in over a dozen feet deep; the walls are believed to have been 20 or 24 feet high.

The southern basilica was, over all, 203 feet by 72 feet, the walls 3 to 5 feet thick. The atrium was 60 feet square, with colonnades on three sides. There were three doors into the narthex. The church proper was 172 feet by 64 feet. All the tombs are now under water. The northern basilica is not so large, the church proper being 65 feet by 33 feet. Both the basilicas were apsidal, with the bishop's throne in the back of the apse, and the altar in an enclosure free standing, between two bays of the nave. In the northern church the throne is free standing, approached by four steps, and behind it, with access on either side, is a sub-apse, the structure of which is not clear. M. Clédat does not seem to recognise the early apsidal position of the bishop's throne, as in the early basilicas of Rome. All of the buildings have suffered greatly by the abstraction of the marble linings and the cut stone masonry.

LORET, VICTOR.—*Quelques Notes sur l'arbre âch*. This is a reply to the paper by M. Ducros, see ANCIENT EGYPT, 1916, p. 34. The various characteristics of the *ash* wood are collected. It produced tar or pitch, it was used to make coffins of the priests, its gum is represented in red lumps in the tomb of Rekhmara, it was the wood for beams up to 19 cubits long, masts for boats up to 22 cubits, and even 42 cubits, and masts for pylons up to 60 cubits (103 feet) high. The great pylon of Karnak would need masts 170 feet high. It is evident, therefore, that a very large conifer is the tree in question. M. Loret gives up entirely his former proposal of *Acacia seyal*, and states the thirteen different conifers found in Syria, from whence the *ash* was brought. These are all inapplicable for various reasons, excepting the *Abies cilicica*, the Cilician Pine, which grows to 30 feet in the Taurus range, and up to 100 or 130 feet in the Lebanon. The great masts are called by the Egyptians the "true *ash*," implying that there was an inferior tree similar to it. As the *Abies* cannot grow on the sea plain, as described in the tale of Bata, M. Loret proposed to see the inferior *ash* in *Pinus pinea*, which, in Syria, reaches to 65 feet high, and which grows down to the shore. For most purposes this more accessible tree would be the *ash* of the Egyptians, but for the greatest masts they obtained the largest conifer, *Abies*, and called it the "true *ash*."

THOMAS, ERNEST S.—*An Unexplained Object depicted on the Tomb of Hesy*. The object has been supposed to be a form of sieve, but Mr. Thomas suggests that it is a sectional view of the cylindrical measures of capacity nested one in another. In a later age, when modes of drawing were fixed, such a representation would be impossible, but as the drawing of series of objects was only starting about the time of Hesy, it is quite possible that the artist was feeling about for modes of expression. The highly mechanical genius of that age might well have conceived of a section of a group.

DARESSY, G.—*Fragment de Socle de Statue provenant d'Athribis*. This gives the titles of the high priest and others of Athribis. The persons are Mer-hor-tef-ef, Tehuti-her, Hagerut, Pef-bastet, Pedakhut, Pen-khebt-uzu, Horta, Hor-hetep, and Zehur.

DARESSY, G.—*Stèle de la XIXe dynastie avec textes du Livre des Pyramides.* These texts are found in Unas ll. 5 to 9, Merenra ll. 172-173, Unas ll. 479-488, Pepy I ll. 638-641, Merenra ll. 667-673, Unas ll. 526-531, 591, Pepy I. 680. The persons represented are named Bakt, Huy, Nāy, Ptahmery, Nefertari, Hō-nefer-atu, Ptahmay, Nesut-ubā-oo named Thāiu, Rennut.

DARESSY, G.—*Fragment Mendésien.* The top of the back pier of a black basalt statue naming the deities of Mendes, Horpakhred, Ba, and Hatmehet Usertsāt.

DARESSY, G.—*Le Fils aîné de Chéchang III.* On a stèle of the 14th year, the king's eldest son is named Baken-nefi; he gave lands at Heliopolis as endowment. The persons named are Peda-bast son of Tada-bast, Pa-khred-ast, and Nes-un-nefer.

DARESSY, G.—*La Chaussée de Mentouhotep V.* This calls attention to the discovery of a paved road 50 feet wide, which M. Daressy followed for 260 feet, just south of the Ramesseum, between that and the chapel of Uazmes. This appears to be the lower end of the causeway leading along the southern side of the Deir el-Bahri bay, as pointed out by Mr. Winlock, see ANCIENT EGYPT, 1916, p. 83.

AHMED BEY KAMAL.—*Fouilles à Deir Dronka et à Assiout.* This is a list of one hundred and sixty-one objects dug out in the plundering by Sayed Bey Kashaba, without any record, in the manner usual fifty years ago. From inscribed coffins down to ushabtis, everything is without history or connection. The continued wreckage of the remaining antiquities of the country, under the patronage of the Department of Antiquities, is inexplicable and inexcusable at the present day.

DARESSY, G.—*Un Sarcophage de Tounah.* This is one of the clumsy granite sarcophagi of the XIXth dynasty, 90 inches long, 34 inches wide. It was at the bottom of a pit 37 feet deep, but it had been completely plundered, and no other objects were with it. The deceased was Tehutmes, keeper of the cattle of Amen, as he is usually described; and perhaps the same as the owner of the large lazuli scarab, in *Scarabs*, xxxviii, 31. He also had the titles of great keeper of the cattle of Amen in the south and north, royal scribe, keeper of the palace, over the works of the king, over the messengers (*uptu*), over the works in the temple of Tehuti, declarer of truth (*up māt*), over the granaries of the temple of Amen, over the house in the divine pylon made for him to his lord.

DARESSY, G.—*Un Naos de Domitien.* This shrine is of limestone, 25 inches wide, and 42 high. It has been damaged, but the back bears a long hymn to Tut, in seven columns. This Tut is a lion-god, hitherto unknown, and said to "judge in the double hall of truth at Heliopolis."

DARESSY, G.—*Gaston Maspero.* This is a recital of the official work of the late Director, without any personal note, or any of the intimate detail which might have illustrated his character, from one who knew him so well.

BARSANTI, A.—*Travaux exécutés aux Monuments de Philæ*. Since the inundation of Philæ, shipping and steam tugs wander over the temples and do serious damage. An obelisk was broken and overthrown, and three columns and architraves were shifted. These have been rebuilt, but the risk of damage is obvious, and a fence of booms would seem to be urgently required around the buildings to prevent their gradual overthrow.

LEGRAIN, G.—*La Statuette de Hor*. This is a squatting figure, with the arms round the knees, 16 inches high, of green basalt, found in the seabkh at Dendereh. The exact similarity to another figure dated to Psamtek I, serves to fix the age of this. It is of Hor son of Zed-tehuti-au-onkh son of Pesthenfi.

LEGRAIN, G.—*Trois Règles graduées*. These are three basalt cubit rods, which were found complete in the seabkh at Dendereh. One bears a demotic dedication to Hathor of Dendereh by "Pana son of Psibast, the man of Sardes, and Pet-hor-suten-ta son of Pana son of Lebren." From the writing, this is dated about 200 B.C. Only the total lengths and breadths are stated, 20·8 inches, 21 inches and 20·8 inches long; 1·5 inch square and the latter two 1 inch square. The whole of the divisions need to be accurately measured. The lines on the inscribed cubit are, on 1st face palms, the end ones divided into digits, one end digit in half and quarters; 2nd face, the end quarter divided into '03, '06, '1, '125, '2, '25 of the whole, evidently a decimal division; 3rd face, in 6 palms, one end palm is thirds, the other quarters, the end quarter in half and quarters. Thus there is here the usual 7 palm division, the rare decimal division, and the almost unknown 6 palm division. The second cubit is divided on three faces into 5, 6, and 7 palms respectively, the same system as the previous. The third cubit has the four faces divided into 4, 5, 6 and 7 palms.

LEGRAIN, G.—*Observation d'un Phénomène optique*. It is remarked that the statues of Ptah and Sekhmet, in their sanctuary at Karnak, show patches of polish on parts of the surface; the feet and the left hand of Sekhmet especially. These seem to be parts which were touched by worshippers, like the foot of St. Peter at Rome. Also other statues, especially those of Amenhetep son of Hapi, who was an intercessor, and of Ramessu, the founder of the XIXth dynasty, show patches of wear by touching. This implies that vast numbers must have come to these statues to thus polish the granite by light friction, and suggests that the shrines were open to all worshippers.

The optical phenomenon is the familiar change of lighting by the passage of clouds over the sky opening, like the shadow figures seen in some Coptic churches lighted through small side openings.

LEGRAIN, G.—*Une statue de Horoudja fils de Haroua*. Five statues of this prince are known, and now a sixth has been found at Dendereh. It is a squatting figure of "the hereditary prince, high priest of Heliopolis, Horoua son of Haroua," of the same titles.

LEGRAIN, G.—*Un Miracle d'Akhmès 1^{er}*. A stele shows the bark of Nebpehtira Aohmes on the shoulders of eight priests, conducted by the prophet Paari, and before it is the priest of Osiris, Pasar, adoring. Below is the inscription, "year 14

Paophi 25 (B.C. 1287, Aug. 21), in the reign of the king of Upper and Lower Egypt, *usermdotra setep ne* Son of the Sun *messu*, giving life, the day of the coming of the priest Pasar with the priest Thay to bring (the oracle) Nebpehri. The priest Pasar came to the field which belonged (to my) son. He heard the (clamours?) of the children of the people. Was the god to establish (the truth?). Came the god at the saying, 'It belongs to Pasar son of Mes,' and the god became very heavy in the presence of the priests of Pehnebra, the prophet Paari, the forward priest Ynuzabu, the (.) priest Thanefer, the backward priest Nekht, the backward priest Tehutimes. Made by the sculptor scribe of the temple of Amenmery Rameses in the temple of Osiris, Nebmehy."

This dispute about the ownership of a field was settled by the oracle of Aohmes I. His bark was borne by the priests into the field; and when asked if it belonged to the priest-claimant, these bearers declared that it became very heavy. This is precisely the belief of the modern Theban. A sealed declaration of the bearers of the bier of Sheykh es-Sayd Yusuf states that when they reached the side of the shrine of Sheykh Abu-el-Abbas, the bier became so heavy that they could not proceed. It seems likely that the previous translations about the god bowing in response really refer to the priests being bowed down by the weight.

LEGRAIN, G.—*On fut Thèbes-ouasit?* This paper shows that *uasit* was Karnak rather than Qurneh. The temple of Qurneh is stated to be built on the west of *uasit* (*per ament uasit*), to see the beauties of *uasit*, looking across the river to Karnak.

LEGRAIN, G.—*Fragment de texte titre nouveau.* This reads: "Over the workers (*ubd*) in the lake north of Amen." It is supposed that this refers to a pond north of Karnak. What the workers did there—irrigating, water-carrying, leather-curing, brickmaking—is unknown.

DARESSY, G.—*Une Stèle du dieu Ched.* The familiar figure of Horus protector standing on crocodiles, is sometimes specialised under the name of *Shed*, the saviour. Here is published a stèle showing "Shed the great god" standing, holding a scorpion in the right hand, and in the left a shield, spear, and two serpents. He is adored by Pa-her-pedt, his son Amenmes, and wife Nubaset; these family names prove that he is the same as is named on a coffin in the royal group of Deir el-Bahri.

DARESSY, G.—*Les Parents de Chéchanq I^{er}.* A stèle shows the great chief of the foreigners, Sheshenq, adoring Osiris, son of the great chief of the foreigners, Nemart; his mother, daughter of the great chief of the foreigners, Thentspeh. This is taken as referring to Sheshenq I, and agreeing with the prevalent misreading of Horpasen's genealogy. All it shows is that Nemart and Thentspeh, the daughter of Usarkon II, had a son Sheshenq, who succeeded to his father's titles. This does not represent a king, but a subject.

DARESSY, G.—*Un Scarabée d'Amenhetep IV.*—This describes a big scarab, like the historical ones of Amenhetep III, giving the cartouche of the living Aten and titles of Nefer-kheper-ra ua-ne-ra, living in truth, Amenhetep, divine prince of Thebes, and the royal wife Nefertythi. The cartouches of the king are also, one

on either side, under the legs. The continuance of the fashion of big scarabs into the beginning of the reign of Amenhetep IV is already known from that in *Scarabs*, XXXVI, 1.

CARTER, HOWARD.—*A Tomb prepared for Queen Hatshepsut.* The greatest discoveries at Thebes are those due to the ever-searching eyes of the natives: the royal mummies of Deir el-Bahri, the tomb of Amenhetep II and its hoard, the tomb of the priests of Amen, and now an entirely new type of royal tomb in a most unsuspected position. Far back in the valleys behind the Tombs of the Kings are now found tombs high up in the cliffs, belonging, probably, to the queens of the early XVIIIth dynasty. Notice was first called to the doings of the natives by a large find of jewellery appearing in the market. Then it was traced to the new region, and now Mr. Carter has cleared out one tomb, and found in it a sarcophagus for Hatshepsut. High up on the cliff face, over 200 feet above the valley, was a cleft in the rock, hidden by a rise in front. As the cliff is 360 feet high, it is hardly more accessible from above than from below. The Arabs reached the place by creeping down a cleft until they reached a ledge of rock, and then lowering themselves down by a rope into the cleft of the tomb. In the base of the cleft was cut a flight of five steps, leading to a passage, this turned to the right and led into a chamber, and there, standing askew, was the sarcophagus of yellow crystalline sandstone, much like that in red sandstone, which was the actual tomb of the queen found in the Biban el-Meluk. On this sarcophagus she is called the great heiress, princess of all lands, royal daughter, royal sister, divine wife, royal wife; this shows that it was made during the reign of Tehutmes II. The tomb was evidently unfinished, and had been abandoned when the queen took the throne, and determined to be buried among the kings. The whole passages and chambers were filled with rubbish and earth washed in and hardened. The Arabs had run a burrow 60 feet in, but not to the chamber; the complete clearance, however, yielded nothing but the sarcophagus. How the Egyptians raised the sarcophagus, weighing much over a ton, up 200 feet of cliff, and then turned it in down the passage, is quite beyond all that we have seen of their engineering. No one better than Mr. Carter could be engaged on this new field, and we hope to hear much more of his results in future.

AHMED BEY KAMAL.—*Quelques jours de fouilles à Dimch es-Sebaâ.* A brief account of this much plundered place, with a list of objects removed in the digging of Sayed Bey Kashaba.

NAVILLE, ED.—*La plante de Horbeit.* This plant is the flower on the head of Nefertum, which resembles the lotus. It is mentioned in a text which occurs on a fragment of XIth or XIIth dynasty sarcophagus at Horbeit, in the south hall of offerings at Deir el-Bahri, Chapter 178 in the Book of the Dead, in the XXVIth dynasty tomb of Aba, and in the XVIIIth dynasty tomb of Puamra. The name of it is "the *sennu* which comes forth from Nut" (Puamra); in the Papyrus Ebers is mentioned, "the plant named sennut grows on its bulb as the *kartu*, it has a flower like a lotus." It is not identified.

Nefertum is often called Mahes, "the terrible lion."

DARESSY, G.—*La nécropole des Grands Prêtres d'Héliopolis sous l'ancien Empire.* Along the eastern wall of the great temenos of Heliopolis have been found four

large tombs of the high priests of the VIth dynasty. They were named Meru, Sebeky, Sebeky By, and Khuneher (Glory of Horus). These were built of limestone, closely enclosing the sarcophagus, with a space of rather over half the sarcophagus length at the entrance. All of the burials had been completely plundered; there only remained, of Meru fragments of two alabaster vases, and of Sebeky the same, and six model chisels of copper. From Sebeky By there were many models, 25 axes, 4 round-head axes, 26 round-head adzes, 12 square-head adzes, 10 double-edged knives, 77 single-edged knives; and of alabaster 9 necked vases, 2 splayed vases, and seven saucers.

Each chamber is inscribed with titles and name on each side, and with long rows of offerings, similar to the interior of the finest wooden coffins of the XIIth dynasty, such as *Riggeh*, XXXIII. It is evident that this style of coffin is descended from the small tomb chamber of the Old Kingdom. The first two tombs had a basalt table of offerings in each. In the first three tombs the sarcophagus had a band of inscription on each side. All of the tombs have been removed to the Cairo Museum, and it is to be hoped that they will be published in facsimile, drawing or photograph, as printed type is inaccurate for the detail, and entirely useless for the style.

During the excavation of these tombs minor objects were found; naturally at Heliopolis obelisks are usual, four occurring, with names compounded with Pepy and Meryra, showing the period.

DARESSY, G.—*Une Inscription d'Achnoun* (Delta). This is on a slab of basalt which originally was prepared for annals of the XVIIIth or XIXth dynasty, having a mention of Tunep. This was reversed, and in the XXXth dynasty a long ritual text was engraved. Lastly, it has been used as a millstone, like most of the hard stones of the Delta. First is set out in lists all the materials needed for a ceremony, then follows directions to the *her-seshita*, showing that this was a priestly title; then the speech of the *seg-hdt*; then, further directions for the *hensek*, *seg-hdt* and *her-seshita*, a lamentation and further speech to the goddess Nubt, whose service is described. M. DARESSY discusses the varieties of kohl named, and other words. For *Khesyt* is proposed the fruit of *Cassia fistula*. It is concluded that this stone had been brought from Tell Abu Billeh (Terenutis) in the nome Amu, and various place-names which occur are discussed to identify them with known sites, ending with a list of twenty-five identifications and a map of the nome. This text is, therefore, of much value for geography.

MUNIER, HENRI.—*Un passage nouveau du Martyre de Saint Philotheos*. Some fragments were already known about this Saint who was martyred at Antioch in the Diocletian persecution. Part of the martyrology, with some wild miracles, occurs on three leaves in the Musée Borgia, here published and translated.

MUNIER, HENRI.—*La Stèle funéraire du moine Mmi*. This tombstone, dated in 869 A.D., is notable as giving the name of Babylon surviving then, and not yet displaced by an Arab name.

DARESSY, G.—*Fragment de statue du Prince Khâ-m-uas*. This statue was at Sheykh Embarek, and is only of interest as naming two local Hathors, of Cusae and of Roant, the latter probably a place by the valley of Speos Artemidos.

DARESSY, G.—*Le Mastaba de Khâ-f-Khoufou à Gizeh*. This has been partly published in Mariette's *Mastabas*, and by de Rougé and Gauthier. The texts are here given in type, but for a tomb of this importance there should be a facsimile publication. The tomb has been anciently altered by vaulting over the court and making it into a storehouse.

DARESSY, G.—*Statue de Georges, Prince de Tentyris*. This figure was found in the sebakh at Denderah. It is of black granite, $3\frac{1}{2}$ feet high, of the Late Ptolemaic period. The name George is known in classical times, though rare. He was a high civil official, hereditary chief, and also prophet of Isis and of Hathor, the head of all authority in Tentyris. From this and another statue is gleaned the genealogy of these princes of Tentyris, apparently Pa-khred-bast, Pennut, Pakhred-ka, named Ptolemy, and Quarkes or Georgios.

REVIEWS.

The New Archaeological Discoveries and their Bearing on the New Testament and upon the Life and Times of the Primitive Church.—CAMDEN M. COBERN, D.D.
8vo. 698 pp., 37 pls. (Funk & Wagnalls.) 3.00 dollars. 1917.

This is a book that was much wanted, to focus together the varied material, especially papyri, that bore on Early Christianity. The work has been done with the responsibility of selection, but letting each writer quoted speak for himself in copious extracts. Everyone who is not already a specialist in these studies will be much indebted to Dr. Cobern, and the work ought to have a very wide circulation. The only matter which seems to require fuller treatment in proportion is the present state of catacomb research, and a report on that, free from the theological pre-occupation which seems to colour recent accounts, would be very welcome.

The work is divided in exactly equal halves, on the papyri and on the monuments. The qualities and nature of papyrus, the principal papyri known, and the general character of the great finds of papyri in the Fayum and elsewhere, begin the work. Next is Deissmann's new view that the New Testament Greek is the Hellenistic vernacular of the time, the same popular language seen in the innumerable letters and documents of the first century; also examples of papyri bearing on the ideas of the people. Then an account of the Fayum, and the condition of the towns anciently. This serves as an introduction to the whole subject. We would only amend one passage where the burnt papyri of Thmuis, which were so sadly ruined in excavation, are referred to with the remark that "it has just been discovered that even these burned papyri can be read." It should be remembered that ten years earlier the burnt papyri of Tanis were recovered without any loss, and two long and important ones read and published. This success should have prevented the failure to manage the Thmuis find.

The next division of the book deals with the New Testament, its origin and textual form, grammar, style, and vocabulary, from the contemporary point of view, giving an active view of the general results. Next is an account of the great codices and the many fragments of gospels and epistles older than the great codices; this shows the very important evidence that they give as to the identity of the codices with the pre-Constantine text. The great interest of the Syriac, Coptic, and other versions is described, and their bearing on the early text.

The collateral documents are described at length, apocryphal, apologetic, and liturgical. To some, this may be the more attractive part of the work, as giving an insight on the tone and ideas of early Christianity, as to how the canonical writings were fitted into the mental frame of the Greek world with its teeming ideas and beliefs. The Logia papyri are quoted and discussed. A description and extracts are given of the Gospel of Peter, written shortly before or after the close of the first century; of the Revelation of Peter; the fragments of lost gospels from Oxyrhynchus; the Apocalypse of Baruch; the Acts of Paul, of which the Paul

and Thekla forms a part, probably of the first century; the Conflict of Severus, and various other apocrypha. Of other writings there are discussed the Apology of Aristides, the Shepherd of Hermas, the Ring of Pope Xystus, the Apostolic Teaching of Irenaeus, Origen on the Book of Revelation, the Letters of Ignatius, and the Teaching of the Twelve Apostles. Nearly all these, be it remembered, were unknown forty years ago, beyond their mere names. It is evident that we must take a far more living and substantial view of the first two centuries than our fathers did, who regarded the New Testament as something floating in air, detached from all history of its surrounding ideas.

The Libelli, or certificates of paganism issued during the persecutions, are next quoted. There is no proof that any of these were given to Christians, they may be merely vouchers for the satisfaction of the authorities, like that given to the priestesses of the Crocodile-god. Some of the Sermons, Prayers, Amulets, and Hymns are then described, among them is seen strongly mystical feeling, especially in the Odes, bordering on Persian imagery. Early Christian letters and martyr-ologies close the division on manuscripts.

The monumental section opens with an outline of the excavations in Palestine of the Hellenistic Age. The Pompeian life is described, and a general account of the Catacombs. What is particularly needed is a recital of all that can be attributed to the first, to the second, and to the third centuries, and the conclusions as to the growth of beliefs and customs which could be drawn from the paintings in each century. The cemeteries of Antinoë and Akhmim are also noticed. Ramsay's results from Phrygia and its early Christianity are well described, and also an outline of the Dalmatian excavations. The great mass of Early Christian stone buildings in Syria are illustrated from the American expedition. The account of the excavations at Ephesus is from Hogarth's great discoveries onward to Roman times, and the results at Athens, Corinth, and Rome are also fully outlined. The Galatian cities also receive notice, beside Tarsus and the Syrian cities.

The conclusion is a summing up on the literary habits, the ways of life, the later Jewish literature, and various matters of interest of the early centuries. To some extent the origin of the work in lectures is apparent in the style, and some tracking back on to previous lines in later parts. A book strictly written as such would be more crystallized. Yet this is what will attract many readers, and prevent one view of a matter shutting out collateral interests. As a whole the work is well organized and clearly expressed; and we have given an outline of it to show what a wide field of information is now available, and how much should be generally known by all those concerned in the history of Christianity.

The Inscriptions of Sinai.—ALAN H. GARDINER and T. ERIC PEET. Folio, 17½ × 13½. Part I. 19 pp, 86 plates. 35s. 1917. (Egypt Exploration Fund.)

In 1905 the expedition to Sinai copied all the Egyptian inscriptions that were then remaining, and the plates of them were in preparation. After many were arranged, differences arose between the decisions of the Committee and the orders given for the publication, progress could not be made, and the material was left in the Fund Office. Now after twelve years it appears in the present volume. The interval has given time for Mr. Peet to take up the subject, to search and compare the previous material of squeezes, photographs, and publications, and so to improve in some cases on the full-sized copies made on the spot. A single copyist can hardly make a definitive copy of a much-injured inscription, and the difficulty

of often working in a gale, which would tear paper if left loose, made copying the less certain. The total result is that of the published copies 309 are from the expedition of Prof. Petrie, 29 from squeezes, and about a dozen from photographs and publications. The expedition copies are the sole authority in most cases, but they have been checked by squeezes in 24 instances, by photographs in 62, and by the originals brought to England in 36 instances. This will give an idea of the sources of the present edition. It is unfortunate that no reference has been made to the copyists, to indicate who made the various copies. Their experience differed greatly, two were completely accustomed to such work, one had slight practice, and two knew nothing of hieroglyphs and had never copied before. Though all their copies were checked over, they were yet of varying precision. In one respect the arrangement of the plates is unfortunate. No attempt has been made to keep the copies to the same scale of reduction. This entirely prevents the relative size of the originals being apparent; it destroys the artistic sense of their relation, and confounds delicate work with large work. It is a system which ignores everything but philology. There would have been no difficulty in maintaining a uniform scale, as on Pl. XXXIV some of the largest and smallest inscriptions, side by side on one block, are to one scale. Parts of the same scene are even issued on different scales, as 125 (a) and (b), see *Researches in Sinai*, Fig. 98. There seems no reason for publishing coarser copies of the plans, which were issued in *Researches in Sinai* in fine outline. Originally published to decimal scales, they are now all irregular. One mis-statement on p. 5 should be noted: "The term 'free-standing stele' has been chosen, for want of a better phrase, in order to indicate the large stelae, usually inscribed on all four sides, that are found in the Approach to the Temple and elsewhere; Prof. Petrie has called these Bethels." This is by no means the case, as can be seen in *Researches in Sinai*, p. 67, where the small shelters on the hill-side are described, and it is suggested that these—with, in some cases, small private steles placed in them—were sleeping places for worshippers. These have nothing to do with the great steles leading into the temple site, inscribed on all sides, which are purely royal. It is unfortunate that Serabit is always mis-spelled Serābit; no one who has heard the word from the mouths of the natives could lengthen the *a*; it is almost inaudible, as shown by the name being often written as Sarbut. The long *a* will tend to enforce the common error of speaking of Serābit.

For the first time we have now an almost complete view of the Egyptian inscriptions in Sinai, and we must fully recognize the additional work which Mr. Peet has given to the fitting together of all the different sources of material, as additional to the main stock of the copies of the Fund expedition. Dr. Gardiner's special province remains in the translation of all the inscriptions, which is to appear as Part II.

Scarabs and Cylinders with Names. W. M. FLINDERS PETRIE. 4to. 162 pp., 74 plates. 30s. 1917. (British School in Egypt.)

Scarabs have always been a favourite subject for collectors, as being small, interesting, and often beautiful. In these respects, as well as in historic interest and value, they are in Egyptian archaeology what coins are in the Greek and Roman world. The scarabs with names of kings and of private persons are by far the most important, and are the more eagerly collected. The bane of most collections is the profusion made under Tehutmes III, which are to the rest of the series what the Athenian tetradrachm is in Greek coinage, or the Constantine

family in the Roman series. Hence to consider the historic value we must disregard the excess of this reign. Of all other named scarabs the present position is that about a third are at University College and here published, a third are in the British Museum, and a third in other collections. The present catalogue, therefore, gives as large a number as can be anywhere compared together; and as regarding variety, it is by far the most comprehensive, having 240 different royal personages and over 300 private, as against 150 and 100 respectively in the British Museum. There is then here the best opportunity for exact study, and solving the various questions that have arisen in the subject. Beside this the published catalogues of the British Museum and Cairo, and of lesser collections, have been fully used in the text. In order to make the series as complete as possible for reference, beside the 240 royal persons represented, there are drawings of objects of 54 others, only known as unique examples elsewhere. Before the scarabs there is given the series of early cylinders of the pre- and proto-dynastic times, so far as they can be collected from all sources. Of these, 63 are at University College, out of a total of 174. All of the name-scarabs and cylinders at the College are issued here in full-size photograph, in plates facing the detailed transcription and catalogue. The forms of the backs of the scarabs are given in 15 plates of drawings, with the date reference to each. Indexes are given of the names and titles.

From this apparatus some of the results are here discussed. In the first place the frontispiece shows the source of different forms of scarab backs in five different genera, only one of which—*scarabaeus*—has been hitherto recognised. This biological distinction must be the basis of any classification of the forms. The marking of the wing-cases on the backs is found to belong to Upper Egypt, and the smooth backs to the Delta. The purpose with which scarabs were made appears, from various indications and references to them, to be distinctly as amulets; it was only during the Middle Kingdom that they were at all usual as seals, and the conditions in other periods show that such use was not their purpose.

The materials and mode of engraving are detailed. It appears that the point engraving was the earliest, and lasted on hard stones down to the XIVth dynasty; while the wheel engraving begins in the XIth dynasty, and is the sole method in the XVIIIth and later times on hard stones. Of course the soft steatite base for glazed scarabs was cut with the point in all ages.

A favourite assertion of most writers on the subject is that scarabs of various kings were frequently made in subsequent times, leading to the further assertion that no scarabs were made before the XIIth dynasty. This fundamental question is fully discussed here, on a much larger basis than before. Firstly, the adoption of the names of earlier by later kings is demonstrated. The name of Tehutmes III. Men-kheper-ra, was adopted by the Theban ruler of the XXIst dynasty, by Khmeny, and by Nekau I, as shown by independent monuments. These later kings will account for nearly all the Menkheperra scarabs that are later than Tehutmes III. Similarly, the name of User-mäot-ra (Ramessu II) was taken by eight kings; and there are eight other royal names which were re-appropriated a second or third time. It is therefore only in very exceptional cases that a king's name was placed on a scarab beyond his immediate reign. This at once removes the supposed ground for post-dating all the early scarabs, and we can only argue back step by step before the XIIth dynasty, as to whether each class found is consistent with an early or a late date. The only material for settling the question is that of the well-dated royal scarabs of the XIIth dynasty and onward. From

these it is seen that fine circular spiral patterns, and hard-stone scarabs engraved, are unknown after the middle of the XIIth dynasty until a few examples appear in the full XVIIIth dynasty. If no such scarabs exist that are dated, it is clear that undated examples cannot be assigned to the XIIIth-XVIIth dynasties. Thus we must assign such undated scarabs to before the XIIth dynasty. In particular, a class of small hard-stone scarabs with roughly-cut names must then be placed about the Xth dynasty. On such is the epithet *Uah-ka-nefer* which agrees with the name Uah-ka of that age, and the names which accompany this epithet belong to the VIth to XIth dynasties on other monuments. Having a secure anchorage in the Xth dynasty or earlier, we see no reason to question the few scarabs which bear names of the VIIIth-IXth dynasties, a period so obscure that we cannot suppose anyone copying it later. The IVth-VIth dynasties have scarabs unlike any made in later times. As far back as Sneferu, at the close of the IIIrd dynasty, an inversion of writing is seen on both his scarabs, *S-nefer-r-f*, inverting the supplementary letters of *nefer*. This inversion is found on two contemporary monuments, the tomb of Sneferu-Khof, and a lid in the Cairo Museum, but it never occurs later. The earliest scarab which has signs of being contemporary with a king is that of Neb-ka-ra, at the beginning of the IIIrd dynasty, for the style of it differs from any made after the IVth dynasty. The early date of scarabs back to the IIIrd dynasty seems then to be confirmed by all the evidence.

A very uncertain point hitherto has been the attribution of scarabs with the name User-mâot-ra among the nine kings who bore that name. This is pretty well cleared up by collecting the arrangement of the signs on all certain monuments (p. 29), and finding some definite criteria to distinguish the reigns. The late rulers of the Dodecarchy are treated more historically than hitherto; Menkaura has come into his place in the XXVth dynasty, guaranteed by a Book of the Dead written for a son of his.

Proceedings of the Numismatic and Antiquarian Society of Philadelphia.
Vol. 27. 1916.

Among several interesting papers here, one on "The Transcontinental Silk Trade at the Christian Era," by Wilfred H. Schoff, touches on Egyptian matters, and is an important study. A map of the routes, and fifty-two figures of the Bactrian gold coinage, add to the value.

The two main routes from China to the Mediterranean were (1) the land route across the Central Asian deserts and Persia to the mouth of the Persian Gulf, thence across Arabia to Petra and Antioch, or down the Persian Gulf and round Arabia, up the Red Sea to Alexandria. The other route was (2) striking off the deserts to Taxila in the Punjab, down to Baroda, and thence by sea up to Alexandria. A variant of this was to embark near Karachi, coast round Arabia, up the Red Sea, and by the Gulf of Akaba to Petra, and so up Syria to Antioch. This was the Nabathæan route. The importance of Koptos, instead of Suez, as the port of Egypt, is due to the north winds in the Red Sea, and the coral reefs which prevent tacking against the wind. In the narrower regions, therefore, shipping was so slow that it was better to land at Berenice, Philotera, Myos Hormos, or one of the other ports, and camel the goods across to the Nile. Hence came the importance of Alexandria rather than Suez or Pelusium.

The principal matters explained in this paper are the commercial relations of the time, which largely involved the trade conditions of Egypt. Silk was known in China by the twenty-seventh century B.C., and had passed into India by the

eleventh century. Probably owing to Alexander's eastern conquests, the Indian goods became known in the West, and silk reached Syria under the Seleucidae. There was still much confusion in Roman times between cotton and silk. The cotton came from trees, and the silkworms were fed on trees, hence, in third-hand accounts, they seemed much alike in origin.

The great development of China in foreign trade was part of the growth shown by their building the great wall to block out the Mongolian hordes and give clear access to Turkestan for the western trade. This was in 200 B.C. probably due to the establishment of the Graeco-Bactrian kingdom in touch with the West. The Mediterranean was still too confused then to give free scope for trade. Not till the firm establishment of the Augustan peace from Britain to Baghdad—or rather Ctesiphon—and the suppression of piracy, was the west ready for the unlimited import of luxuries. Hippalus for the first time revealed the trade monsoon to the West—the easy navigation in opposite directions at different times of the year. Roman shipping grew immensely. Strabo, 26 B.C., says that formerly not twenty ships traded in the Arabian Gulf, but that now a hundred and twenty left Myos Hormos for India (II, v, 12). The trade was, however, one-sided: the Chinese market needed but little from the West, consequently the imported silk had to be paid for in gold. Rome had accumulated great stores of gold by the Greek plunder of Persia and all the earlier civilisations. This overflowed in the rage for gilding in the time of Nero and his "Golden House"; and this gold was the exchange for the imported silk. Much of this wealth was detained by the way in transit dues of the Parthian empire; and it was this wealth, foolishly given up by Rome, that armed the East against the Empire, and so helped its destruction. As much as four million pounds a year was being thus transferred.

Looking next to the eastern side, the terminus of the trade route was at Singanfu, which explains the importance of this place so far inland, and the presence of the Syrian Christian mission there. It is the first place clear of the desert and the mountains, whence roads lead in all directions to the fertile regions and coast of China. The Chinese were by no means content to let everything pass through intermediaries. They despatched one Kan Ying to follow the trade route, and try to open direct trade with the Roman consumer. He succeeded in reaching the Euphrates and tried to go forward from the Persian Gulf. The traders, through whom alone he could gather information, did their best to scare him with stories of tigers and lions by land, and a terrible salt sea which might take two years to cross. Thus the Nabathæan and Egyptian traders succeeded in keeping the business in their own hands.

Not only was the silk trade from China, but the Coans and Syrians learned how to reduce the heavy China silks to thin gauze. This cannot have been by "splitting," as is said: they must have unravelled the stuff, respun the thread very fine, and used it to weave the gauze. This fresh stuff had some return sale to China, not only for its fineness, but from the attraction of its dyes. The importance of the Turkish kingdom of the Tochari was due to their being necessary intermediaries in the land transport; they held the former Greek kingdom of Bactria, and their first great king, Kanishka, is well known by his abundant coinage. His Buddhist council of 38 B.C. started the era still used in India. His gold coinage is very varied, with figures of Mithra, Nana, and other Indian gods, and even of Serapis, showing the strong Alexandrian connection. This coinage is exactly on the standard of the *aurei* of Augustus, and it seems likely that it was struck on the imported *aurei*.

Les Noms de l'Égypte.—G. DARESSY. (*Bull. Inst. Ég.*, 1916, 359.)

This is an account of the names *Aiguptos* and *Micri*, and an exposure of some recent mistakes in philology. The first name is referred to *Ha-ka-ptah*, the name of Memphis; the second to *sur*, "to press or restrain," *masur*, "a bounded or fortified place." But if we may grant a confusion of *sad* and *sin*, the Arabic *sar*, "a wall," would give *masur*, "walled," more directly as the fortified land west of the Semites.

L'administration locale sous l'ancien Empire.—A. MORET. (*Comptes Rendus Acad. Inscr.*, 1916, p. 378.)

The official *sar*, plural *saru*, is frequently met with in all ages from the Vth to the XIXth dynasty. The *saru* appear to be independent of the royal service. In the Old Kingdom they met in assembly, *seh*, the *seh* hall being a local court, where they judged suits relating to contracts, and punished delinquents. In the Middle Kingdom the assembly of *saru* was called the *qenbet*, and the members *qenbeti*, or corner men. This, M. Moret says, was because they met in the corner of the royal hall. This would tie them to be mere court functionaries, which seems hardly to have been the case until the Empire. They judged contracts, the division of property, wills and sales. In the Empire there was a "great *qenbet*" in the capitals, and, therefore, lesser *qenbets* locally.

The Koptos decrees show somewhat of the scope of the *saru*. They issued orders, *saru*, different from the royal decrees, *usu*. These orders had to be countersigned by the Director of the South, and no lesser official, before they were issued as binding on the Nome. The orders of the *saru* were administered by the royal officials. The *saru* settled the *corvée* for the palace or temples, and the incidence of local taxation. Tenants who became rich rose to be *saru*; they were placed under a *sar* to collect the rents and manage the estate. Maspero sums up that the *saru* were the *meshekkh* of modern Egypt, and were qualified by birth, or alliance, or fortune, or wisdom, or age. They were not nominated by the king.

It would seem then that they must have been co-opted. They represent a primitive form of government of headmen, a parliament of the Nome, which retained its independence, like English town councils, with the right of local assessment of taxes, levied in block by the king. All cases which did not touch the royal rights seem to have been left to their control. This is an interesting view of the relation of central and local government in early ages.

Six nouveaux gisements préhistoriques dans l'Azaouad.—DR. CAPTAN. (*Comptes Rendus Acad. Inscr.*, 1916, p. 445.)

This concerns a region covering about 400 miles north of Timbuktu. The writer agrees that it is only reasonable to assign flints of types known in Europe to the same age as in Europe, as we have done in ANCIENT EGYPT, 1915, pp. 59, 122. He details various stations: (1) Erg Jinetart, 200 or 300 miles north of Timbuktu, with flat, oval and lanceolate haches, like the Upper Chellean; they show a numerous quaternary population in what is now one of the most dangerous regions of shifting sands. (2) Near Taodénit, 400 miles north of Timbuktu, there are small mounds, apparently remains of dwellings, with fragments of pottery and grinding stones, borers, and mortars. The weight of these shows a settled population, and the use of them proves that they were agricultural. (3) At Kollé, west of Timbuktu, near the Senegal river, are many tools made of a black sort of lava called labradorite. (This seems contradictory.) Some are large cylindrical picks,

axes, adzes, as in the upper beds of the Somme, and as at Spiennes; apparently neolithic. (4) A little north of this, at Agamami, are similar tools, but especially large discoid pieces, some of which have most of one face removed by a single big flake; this is like the European Mousterian, and is very usual in Egypt. (5) Bafoulabe, on left bank of Upper Senegal, has a gravel from which have been worked cores and small tools, apparently pigmy flints. Probably late neolithic. (6) Sikasso, same region as last. Polished axes found, some almost cylindrical, others splayed, others short and wide-edged; made of diorite, labradorite, or haematite. They are now considered of magic value. These observations show a wide spread of man in various ages, where now the conditions have greatly changed for the worse. This is to be expected, looking at the great differences of sea-level and climate in the Prehistoric ages.

Excavations at Tell el-Amarna.—L. BÖRCHARDT. (*Smithsonian Report*, 1916.)

The systematic clearance of the houses of Amarna by the German expedition before the war is here summarised. The ancient, like the modern, Egyptians disregarded occasional floods when choosing sites, and a large number of their houses are found in the valley now covered with six or eight feet of gravel and sand washed down. Even European houses near Cairo are built where a rare storm will wash away the whole house and furniture, and leave only a mud heap. Although the houses were generally enclosed with their gardens in a high boundary wall, as in modern Egypt, yet in one case an outside garden, seen by the public, was provided. The custom of walling up doorways, on leaving a house, was also found to be usual. The largest house cleared was that of the General Rames. In this, the doorways were of stone, and inscribed with the names of Rames and his wife. The walls are preserved to about five feet high, so that the painting of the large hall can be followed. It does not seem that any figure paintings were found, like those of the princesses (Oxford) or in Petrie, *Tell el-Amarna*, V. A resin and mud head of a baboon, and relief of the king and queen, were found, which are supposed to be the modelling material of the artist. The relief, however, has a raised margin to it, which shows that it has been cast from a mould, and the buckled and wavy state of the surface suggests that it was from a repoussée sheet of metal. Certainly there is no trace of a surface such as would be left by modelling upon the resin. Some fine ivory carvings were also found, of the old subject of smiting enemies before a god; but as they are of Tehutmes IV, they have nothing to do with the New Art. Two cuneiform tablets were found, both imperfect. One is a syllabary, the other a composition called "King of the Battle," describing a campaign in Western Asia.

Hellenistic Tapestries in America.—W. SHERWOOD FOX. (*Art and Archaeology*, 1917, 161.)

This is an enthusiastic article on the Roman figure textiles, with 10 illustrations. Though of Roman or Byzantine age, the subjects are rather Hellenistic with Oriental influences. The whole of the purple tints, violet, blue-black, brown-black, or carmine, are due to modifications of madder. The art of these subjects cannot be taken by itself, as Mr. Fox is inclined to do, but must stand as a part of the style of the time in sarcophagi, ivory carving, and illuminations. It is a part of the great question debated by Strzygowsky and the late Jean Maspero, as to the extent of different influences in the later Empire.

NOTES AND NEWS.

WE are favoured with the following remarks by Mr. Somers Clarke, upon the recent paper by Mr. Davies:—

"May it not be possible that Mr. N. de G. Davies has misinterpreted the rough plan shown on p. 23. in Part I, *ANCIENT EGYPT*, 1917, and has gone wide of the intention of the maker of it? Is it a ground plan?"

"Mr. Davies thinks it possible. He claims for it no sort of accuracy; indeed, it is very evident that it is not drawn to scale. To what period does it belong? The quarry, being near the Nile, may have been in use long after the time of Akhenaten.

"What may it be other than a ground plan?"

"A study of the blocks of stone forming a temple, either partly in ruins or never completed, makes it very clear that there was a well-arranged system of communication between the temple-builders on the one hand and the quarry-master on the other. From the temple a notice was sent to the quarry stating that blocks approximating to certain dimensions were required.

"Nor was that all. The form of certain stones required was also indicated. Drums, or half-drums, for columns were demanded, or it might be lintels or ceiling slabs, door heads, etc.

"To give an example. We may observe at Karnak, in the Third Pylon, that certain half-drums of columns being in hand, the builder made use of these as walling stones and not as columns.

"In the quarries themselves is evidence that blocks of stone were cut according to order for special purposes. The bulk of the material extracted was in blocks for walling, one stone very similar to the other.

"When we reflect that the greatest number of large blocks of stone made use of in an Egyptian temple were for the columns and roof, it becomes evident that the quarrymaster would be more interested in securing suitable blocks for these purposes than for the walls; but even for the walls stones of some size are needful for doorways, lintels and thresholds.

"May we read the plan in question as indicating a building with brick and not stone walls. The quarrymaster was therefore not interested in these walls. This the drawing seems to indicate.

"The plan of the building, whatever it may be, is certainly not like that of a temple, so far as we know it.

"In the tomb of Huia at Tell el-Amarna, there is, well preserved, a plan of a temple which it is fair to suppose is that of an ideally perfect structure. By making use of the word "ideal," I would not suggest some flight of fancy, but an indication of a temple complete in all the parts, such as might be hoped a finished temple would be. The great entrance pylon, courts, etc., are all shown. The sunrays shine down upon the roof of the sanctuary. Doubtless there were many such in Egypt, though now we find but one left complete—at Edfu.

"In the plan under consideration, the columns in the portico, and certain of those in the more remote part of the building, could not have been joined by architraves, being too far apart. Possibly a timber roof was here employed.

"Can we venture to draw any conclusion as to temple plans until we arrive at the XVIIIth dynasty? The few earlier remains, attached to Pyramids, are in all cases the ruins of funerary temples, as are so many of those of the XVIIIth and XIXth dynasties.

"In the plan under consideration there is no trace of a sanctuary. In undoubted temple plans, big or little, the sanctuary is the kernel of the nut; the shell has often taken centuries to enclose the kernel. Where is the sanctuary on this plan?

"Can Mr. Davies, by indications on the spot, assign any date to the drawing of the plan under consideration?

"It seems safe to affirm that the building represented was not a temple plan of the period of Akhenaten, nor, as I believe, of any later period.

"SOMERS CLARKE."

With the greatest regret we hear of the sudden blow to work in Egypt, by the loss of one of the most active officials. Georges Legrain had done more than anyone to recover and restore the great monuments of Egypt, and every visitor knew of his immense work at Karnak. He had apparently been much hindered and thwarted by opposition and difficulties lately, and had felt it necessary to stay during the summer to care for his work. On Sunday, 19th August, he wrote to a friend: "I can do no more. I have never suffered thus. I must leave. I shall take the train on Thursday evening." Alas! on Wednesday the 22nd he died at Luxor.

An old friend of Egyptology has passed away by the death of Mrs. Grenfell, at Oxford, on August 8th. Her bright and incisive remarks and questions will always be remembered by her friends. She had for years past been most persevering in collecting photographs and copies of scarabs, and her studies on them were published in the *Recueil*, the *Rendiconti* of the *Lincei*, *Ancient Egypt*, and the *Journal of Egyptian Archaeology*. Besides these permanent productions, her labours of collecting material will happily not be lost, as her son, Prof. Grenfell, purposes that they shall be of use for students at University College, London. After a life full of activity in many different interests and ways, and of deep gratification in Prof. Grenfell's great results, rest came to her in a tranquil and painless failure.

The first of our fellow workers of the British School that the war has removed was Lieutenant Thomas B. Butler-Stoney, J.P., at the age of 42. He joined our work at Tell el-Yehudiyeh and other sites, and many of his drawings illustrate "Hyksos and Israelite cities." None have left a more engaging memory, by his conscientious work and his sweetness of character. After that time the duties of a landlord made him carefully study agriculture, and follow home pursuits; but he never lost his interest in Egypt, and we owe to him the lettering of the title on the cover of this Journal. His artistic work is known both by paintings and by book illustration. He entered the army in 1914, the fifth month of war; seriously wounded both last year and again this year, he died from these wounds on 30th September.

The death of the Hon. Jeremiah Lynch claims a place here as one of our well-wishers and Hon. Secretaries, in San Francisco. He had mining experience in America, then lived some time in Cairo, and published a book of *Egyptian Sketches* in 1890. This deals partly with the antiquities, and describes the breaking up of the fallen casing of the Third Pyramid for hotel building. Eight years later he started out for Klondike, with considerable capital and experience. He introduced there steam-thawing for the ground, which is always frozen at four feet down; he made a great success, and then published *Three Years in Klondike*. He had a facility in precise and picturesque description of characters and things. A year before the war he was in Egypt, and bought two decorated mummies, to replace those which were destroyed at his club in the great fire at San Francisco.

A new quarterly periodical is announced, *Sudan Notes and Records*, under the management of Mr. Crowfoot, the Director of Education. His name is a guarantee that the antiquities will not be overlooked among the many subjects of interest in the Sudan. Mr. R. Wedd is the Secretary, to whom the annual subscription of 10s. 6d. should be sent, at the Lands Department, Khartum.

Mr. Seymour de Ricci is at present interpreter with the British Forces in France. He is also engaged on a bibliography of the works at present of value in Egyptology.

Lieut. Brunton is working seventeen hours a day in directing the Egyptian Labour Corps in France. We hear that, also, the Chinese are much employed in the factories of Marseilles.

The *Egyptian Gazette* gives particulars of the Philadelphia expedition at Memphis, clearing the palace of Merenptah, which was discovered by the British School. The limits of the building are not yet reached, so the plan is not defined. The large court 90 x 150 feet has the bases of columns, but the shafts were gone or overthrown. Two other halls have figures of the gods and scenes, still retaining some colour. The bath room has been found, and some large doorways; but the places had suffered greatly from stone-looters, even the pavements being much destroyed. It does not appear that anything of new historic or artistic importance has been found. As the building is three feet under water at high Nile it is not thought practicable to preserve it, and parts are being removed to museums.

SCOTTISH WOMEN'S HOSPITALS, LONDON UNITS.

AT the outbreak of war, when the attention of all of us was diverted from Egypt, it seemed obvious that one must utilise any large organisation at one's command, for purposes of war relief. It was agreed by the Committee of the British School that I should make a collection of funds from the members of the School, for the benefit of the Officers' Families Fund. During 1915, therefore, I raised over £1,000 in donations from our members, and when Lady Hope resigned from that Society we ceased to collect for it. As I had been specially interested in the beginnings of the Scottish Women's Hospitals (N.U.W.S.S.) in 1914, joined their London Committee, began to raise funds for the London Units, and was elected Hon. Secretary in 1915, the Committee of the British School agreed in 1916 that I might concentrate on collecting funds for these Units. During the past year, I have been sending to members of the School a combined appeal for payment of the annual contribution to Egyptian research, and a donation to the Hospital Units. We issue a list of the donations which have, so far, been received:—

"Seaton Bed": Iron Trades Employers' Insurance Assoc., per A. E. Seaton,	£75.
Henry Amis, collections made by	£61 19s.
Dr. J. J. Acworth, Stewart Margetson	each £10 10s.
Miss H. Davies, John Masefield, Mrs. Middleton, Miss Whidborne	each £5
H. Gaselee, Mrs. Llewellyn, Miss E. Shove, M.B., Miss B. Vickers	each £3 3s.
Miss E. Andrews, J. F. Chance, C. H. Corbett, Miss Corry, Miss M. Crofield,	
Miss Dobson, R. C. Michell, Mrs. Alex. Muirhead, H. Oppenheimer,	
Mrs. Rawlinson	each £2 2s.
H. J. Martin, £2 1s. Miss Bellew, Somers Clarke, M. P. Coode	each £2
Mrs. Allen, Mrs. Robert Blake, Dr. Estlin Carpenter, Most Hon. the Marquess of	
Crewe, J. R. Heape, Miss G. Lister, Frank Morey, F. W. Percival, Mrs. Wynne	
Paynter	each £1 1s.
Mrs. Cawthorne, Miss Eckenstein, Miss M. C. Martineau (the late), Miss M.	
Reddaw	each £1
Rev. G. H. Aitken, Miss E. Austin, Miss H. R. Cowan, Miss H. Farquhar, Miss	
Miles, Miss E. Mounsey, N. F. Winckworth	each 10s.
Miss Adam, 5s. 6d. Mrs. Alder, Mrs. E. W. Browne	each 5s.

It is proposed that the subscribers to ANCIENT EGYPT should be also asked to send a donation to this relief fund, to swell the amount which members of the School are so generously contributing. It is only in the past two months, when an office holiday gave opportunity for application to the task, that I have seriously begun to work up this fund, and £237 6s. 6d. is the total at present reached.

It is scarcely necessary to say much about the S.W.H., they are so well known after their chequered career in Serbia and half-a-dozen other countries. We are responsible for the maintenance of two Field Hospitals, under Dr. Elsie Inglis, and a Motor Transport Section, attached to the 1st Serbian Division of the Russian army in Rumania. Those who prefer to help our French ally can contribute for the maintenance of the London Ward in the Abbaye de Royaumont. We have to raise £1,000 a month to meet the needs of the London Units.

May I invite donations from any readers of ANCIENT EGYPT? Small sums are gratefully received, and should be sent (crossed London, County and Westminster Bank) to H. Flinders Petrie, Hon. Sec. S.W.H., University College, Gower Street, W.C., 1.

H. FLINDERS PETRIE,
Hon. Secretary.

August, 1917.



STATUE OF NEFER-SMA-ĀA.

BLACK BASALT

COWPER COLLECTION.

ANCIENT EGYPT.

THE VOICE OF NECESSITY.

"WHAT we have set our hands to the plough to do—to win this war properly—is going to call for every ounce of energy directed into the right channels. . . . The first duty which rests on every man, woman, and child in this country to-day is so to order their lives that they make the least possible demand at all times upon the energy of others. . . . As Minister of National Service I want to say to you here and now that your first duty to the State is to use nothing, to buy nothing, that you can get on without. . . . Think all the time: 'How can I make the least possible call upon the energy of my fellow men?' That is the first duty of us all."—(SIR AUCKLAND GEDDES.)

Such is the unhesitating voice of a man who sees the necessities which have been obvious for some time past, but have not been proclaimed. So long as the flood of printing was unabated in useless channels, it was reasonable to keep up a scientific journal. Now that the true course is to be really enforced on the main outlets of expenditure that is not essential, we must have no hesitation in following the right line for our country's welfare. To continue any journal which does not help the war is treachery to our own cause. Paper, print, and postal work are all needed to be reduced, and our only right course is to pause in the issue of this journal, however desirable it may be to keep up historical interests.

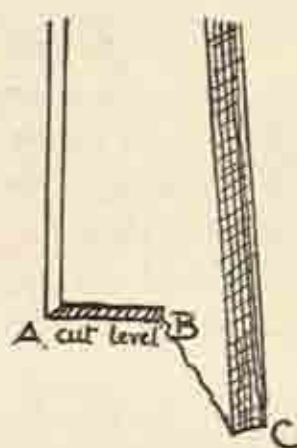
We must therefore suspend the publication of ANCIENT EGYPT for a year; hoping that 1919 may see conditions for its continuance. The summaries of Journals will be resumed from the present point; and we beg contributors to send articles and news, for the issue when resumed. There is no lack of demand by subscribers for such a journal; and the interest from the reserves of the British School would much more than cover the whole cost of it. There is no question, therefore, of its continuance in future, when the present wrecking of the world can be brought to a stop, and the rights of humanity, of good faith, and of treaties are once more enforced by civilisation.



W. M. FLINDERS PETRIE.

STATUE OF NEFER-SMA-ĀA.

(WITH THREE PLATES.)

THE statue, formerly in the Hope Collection and now in the possession of Mr. H. S. Cowper, is of black basalt, and dates to the Saite period, about 600 B.C. It represents an elderly man, clean shaven and bald, carrying a shrine in which stands the image of a god wearing the double crown. The feet of the statue are



broken away, and the fractured part has been cut level to make it stand firmly on the modern pedestal. The feet and the base, on which there was probably an inscription, are therefore lost. The accompanying diagram, drawn by the present owner of the statue, shows exactly how much is missing. From this it appears that none of the inscription at the back has been lost or destroyed; a supposition borne out by the squeeze, which shows a blank space at the bottom of the first line and between the vertical lines below the , a space large enough to contain more than one sign. In the second line enough remains of the enclosing vertical lines to show another blank space at the bottom below .

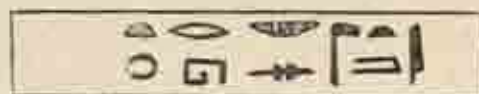
The costume of the figure consists of a long straight garment hanging without a fold from the armpits to the ankles, probably representing a single piece of cloth wrapped round the body, the opening being at the right side in front. Across the chest is a long roll which may possibly be part of the clothing, but may with equal likelihood represent the insignia of an office or an amulet case containing written charms. Covering the left side of the chest is a triangular piece of cloth which may have been fastened to the garment or to something beneath; at the shoulder it appears to be twisted, widens again into a triangular form over the left shoulder-blade, and disappears under the garment at the back; the effect is of a kind of sleeve. Both the roll and the pseudo-sleeve are unusual.

The inscription down the back is in two vertical columns of incised hieroglyphs:—

1. "The great one; the worthy one of Thoth, great king of the North¹; prophet of Khepery;² beloved of Min and of Neith of Sais;³ prophet of Uazt, lady of Mynt;⁴ scribe of the name and accounts of Thoth;⁵ scribe of the

2. Five,⁶ the guardians of the lake of Great Sais and Little Sais;⁷ Nefer-sma-āa, son of Ni-Hor-pa-sa-Yst,⁸ the name of his mother mau,⁹ follower of his god,¹⁰ praised of his Nome, strong one of divine offerings."¹¹

On the shrine below the figure of the god are the words: "Atmu, lord of Sais."¹²



INSCRIPTION ON SHRINE.






NEFER-SMA-ĀA.








NEFER-SMA-ÄÄ.

Notes.

¹ The king of the North. As a title of Thoth this is unusual; the epithet is given to him as Lord of the northern Hermopolis, of which the Egyptian name was , the XVth Nome of Lower Egypt. The figure of the king wearing the Red Crown is uncommon when standing alone; it seldom occurs except in connection with a companion figure wearing the White Crown. The royal crowns are always interesting, the Red Crown particularly so. Their magical powers are often mentioned, and they are clearly looked upon as feminine divinities, for they are represented on the basket-sign which is the token of the primitive goddesses. The inscription of Khenti-em-khast, of the XIIth dynasty (Sharpe, *Inscriptions*, Pl. XXIX), gives a certain amount of information on the subject. His most important title was "Chief of the Secrets of the royal *hekher*," and, from the context, this appears to mean that he was charged with the preparation and custody of the two crowns. The Red Crown was the more dangerously magical of the two, for, in l. 8, Khenti-em-khast is said to be "He whose footsteps are taboo (lit. guarded against) when adorning the Red Crown at the Appearing of Horus, Lord of the Palace." Still earlier, the magical qualities of the Red Crown are even more apparent. Like its fellow, the White Crown, it was *Urt-hekau*, "Great One of magic," in the Pyramid Texts; and it is apostrophised in the Unas text (l. 272), each epithet being determined by the Red Crown on a basket, with the exception of the last, which has the uræus: "O Neith, O Yny, O Urt, O Urt-hekau, O Flame, grant thou (fem.) that Unas be cut in pieces as thou (fem.) art cut in pieces." Another statement in the Unas text (l. 518) shows that the ancient idea of acquiring magical powers by eating was prevalent at the time: "Unas has devoured the Red Crown, he has swallowed the White Crown."

² Khepery. The  is here placed before the .


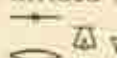
³ The writing  is a variant of the earlier  or . The Egyptian  appears to have been always liable to lose the value R and to interchange with . Neith of Sais was one of the most important deities of ancient Egypt; she is a goddess without a consort, yet as early as the Pyramid Texts Sebek is called her son (Unas, l. 627), and as late as the XXVth dynasty Neith is represented suckling crocodiles. The goddess herself is always represented in human form, but her name may be determined with her emblems, the Red Crown, the shield and arrows, or the so-called shuttle. The quotation from the Unas text, given in Note 1, suggests that at one time the goddess, in the person of her representative, was put to death and dismembered in the fashion generally connected with the cult of Osiris (see Murray, *Man*, XIV, p. 17).



* Uazt, or Buto, the goddess of the North. She is here called Lady of Mynt, a place which is identified by Brugsch as "le nom du bas pays du 18^e district de la basse Egypte" (*Dict. géog.*, p. 246).


† It is not very clear what the ape holds in his hand; possibly the roll of papyrus, a sufficiently appropriate emblem for the god of writing.

‡ The title "Scribe of the Five," is both unusual and interesting. In the Old Kingdom, "Great One of Five of the House of Thoth," is the title of the High-priest of Hermopolis. Like all the High-priesthoods, it is a rare title, considerably more so than that of Memphis, probably because the Old Kingdom cemeteries of Hermopolis have not yet been fully worked and recorded. The Five were clearly the Council of the Temple, of whom the Great One was the Chief. If in this inscription *san she* is in apposition with The Five, we here obtain a clue to their functions. The Lake of Sais was, as Herodotus points out, the scene of the passion-play of Osiris, and, consequently, one of the most sacred spots in Egypt. Its peculiar sanctity was due to the fact that the man who represented Osiris was put to death by drowning (Murray, *A.Z.*, 1914, p. 127), the god himself having met his death in the river. A stele of the Persian period gives the place of the drowning of Osiris as in the Delta.

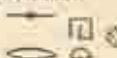
§ I can find no evidence that Sais was divided into two, or that there were two towns of the name, but  and  suggest the translation. *Gba* means, literally, "weak, feeble"; Coptic *σωβ*.

* Mr. Gunn suggests that the name may be read "Sma-tai," not Nefer-sma-āa. Of the father's name Hor-pa-sa-Yst is the more usual form, though Ni-hor-pa-sa-Yst, "He who belongs to Horus, the son of Isis," is probably more correct.

† The title (?) and name are obscure. Lion names are always rare.

‡ As so often happens in late writing, the sign , originally *fa*, is used as *f*.

§ The exact meaning of *nekht en neter hetep* is not clear; neither is the connection clear between the three epithets.

|| The place-name is spelt , which I take to be an attempt to represent the two-syllabled word Sais.

We have to thank Mr. Cowper for the photographs and for a squeeze from which the inscription is here drawn.

M. A. MURRAY.

THE LIBELLUS OR CERTIFICATE OF PAGAN SACRIFICE DEMANDED BY THE EDICT OF DECIUS.

AMONG the wonderful discoveries of ancient literature and records illustrating the life of the Egyptian people in Roman times by means of the papyrus, there is one form of document which throws great light upon a crisis in the history of early Christianity which is not so well known as it should be.

This is one of the most recent results of the recovery of many manuscripts from the sand, and public attention has not yet been attracted to the subject. The following particulars will prove it to be a matter of much interest, and an important addition to our knowledge of the history of the times.

Of all the persecutions endured by the early Christians under the Roman emperors, that suffered under Decius was the most severe, because so universal. The cause of this was that the emperor adopted a new plan for ensuring the return to orthodoxy of all within the empire's frontiers. The duty of seeing that everyone, men, women and children, offered sacrifice to the pagan deities, was placed upon local committees elected by the people themselves in every town and hamlet.

Hitherto the enforcement of laws had been in the hands of the administration and its governors, praefects, and magistrates; but, as with India to-day, the provinces were much understaffed, and the rulers were often placed over too large a population to see that such decrees were strictly carried out. Each of the new local committees had only so many people to supervise as it could properly attend to. The obedience was compelled by requiring every person to be provided with a certificate of due performance, which took the form of an application to the commissioners for them to certify compliance with the special imperial edict issued in the first regnal year of Decius. In order to enable the commissioners to clearly comprehend what the edict demanded, there is no doubt but that the wording of the petition for a certificate of performance was embodied in it. It was practically a request for a written proof of orthodoxy. The application had to be signed by the petitioner unless illiterate, and the fact of due performance was to be attested by the signature of one or more commissioners.

These documents were called "Libelli," and until recently no specimen was known. The number of these libelli now known to scholars and carefully edited is twenty-six. Some of these are only fragments, and not now complete texts. They relate to five different towns: Theadelphia, Alexandria-Nesos, Philadelphia, Arsinoe, and Oxyrhynchus; but of the number ten are from Theadelphia alone. Their formulae are so precisely similar that, should more be forthcoming, it is not probable that variants of value will be disclosed. Doubtless the phrases are cited from the terms of the Edict, and so the differences are quite insignificant.

Some specimens have a few words inserted which are not to be found in any, or at least in the majority, of the others. If it is desired to obtain a most complete text by absorbing therein all the words to be derived from the twenty-six manuscripts, that can be done by presenting the text of one archetype copy and adding to it words there absent but present in other copies—these extra words being

indicated as being so by placing them within brackets. The following text is the result of exhibiting the libellus sentences in this manner:—

"To the commissioners of the village of Alexandrou-Nesos, elected to superintend the (sacred offerings and the) sacrifices. From Aurelius Diogenes, son of Satabos, of the village of Alexandrou-Nesos, aged 72 years, with a scar on his right eyebrow. I have at all times (of my life) offered sacrifices (and libations) (and manifested my piety) to the gods, and now again in accordance with the Edict in your presence I have made sacrifice, and libations, and partaken of the sacred offerings, and I request you to certify this statement. May you prosper. I, Aurelius Diogenes, have presented this application. I, Aurelius Syros, have witnessed your sacrifice. The first year of the Emperor Caesar Gaius Messius Quintus Trajanus Decius, pious and prosperous, Augustus, on the second of the month Epiphi."

Although the actual legal phraseology of the libelli is practically identical, there were variations in the status of the persons concerned, or private matters and fancies, that caused minor diversities in their wording. These can better be set forth by mentioning them severally as additions to or deviations from what may be termed the basic text just given, which is one for a single male person, and the formula of which is probably derived from the phrase of the Edict.

Thus one of the earliest examples found is a certificate for two brothers and their wives. The names of the parents are omitted, but a special addition is made to the name of their city by mentioning that the parties resided near the town gate. Another libellus is of a lady named "Aurelia Ammonous, priestess of Petesouchos and the gods of the Moeris quarter." She, or her amanuensis, does not mention the city, but states that she lived in the Moeris district, so we know that it was Arsinoe.

Another of these documents from the same city is that of a lady, Aurelia Demos, a name suggesting she was one of the people. She appears to have been illegitimate, for she admits she "had no father," and so gives her mother's name of Helena. She was married to one Aurelius Irenaeus, and he wrote her signature at her request because she was illiterate. In her case the witness to her act of sacrifice was the prytanis of the town. Another libellus is a joint one, for a man, his wife, their son Dioskurus, and their daughter Lais.

The last libellus yet published, that of Aurelius Gaon, appears to show that he, or he and his wife Taos, sacrificed by proxy for one or more of their children, for it reads: "I have, etc., etc., tasted the offerings with Taos my wife; Ammonius and Ammonianus, my sons, and Thecla, my daughter, acting through me." This reminds one of the statement in the New Testament that if a man believes he shall be saved, and his house. This libellus, which is from Oxyrhynchus, is peculiar in using the words "divine decree," instead of "Edict."

In one of the lot of libelli from Theadelphia, the man's age is appended at the end before the names of the witnesses, and it is mentioned that he was an invalid. This town appears to have had many citizen immigrants from other places, for when stating the persons are certifying at Theadelphia, the texts add that they came (originally) from Apias, Theoxenis, Philagris, and Arabes. One of these documents has a peculiar interpolation, setting forth that its owner "had been a member of the house of Aurelius Appianus, exergetes of Alexandria, who bore many titles." This is a personage well known from other administrative papyrus documents.

It will be noticed that all these people bear the name of Aurelius. This is because, about forty years previously, Aurelius Caracalla bestowed on all the provincials the rights of Roman citizenship, which we know were of such value to St. Paul. These rights, however, did not extend to the *dediticii*, or poll-tax paying class. The edict of citizenship is partly preserved in a papyrus now at Giessen; see *Griechische Papyri zu Giessen*, I, 40.

The dates of the twenty-six libelli we have range over thirty-two days. There was an old Roman custom which allowed a period of fifty days for compliance with an edict, and this may have been permitted in this case; but Decius appointed each commission to sit permanently until every citizen in its district had complied.

A perusal of the full text of the libellus given above shows that there were three ritual acts demanded to be enacted in order to obtain a certificate of compliance by a signature to the document. These acts were the offering of incense; the libation, which means the pouring of some wine from a cup upon the altar and the drinking of the remaining contents; and the sacramental participation in the sacrifice by consuming a portion thereof.

The last libelli to be edited in this country may be found in Part XII of the "Oxyrhynchus Papyri" and the Catalogue of the Rylands Library Papyri at Manchester.

JOSEPH OFFORD.

THE ALEXANDRIAN COINAGE OF THE EIGHTH YEAR OF GALLIENUS.

1. THE issues of the Alexandrian mint in the eighth year of Gallienus present some difficulties of arrangement, and raise problems of chronology in connexion with the temporary recognition of Macrianus and Quietus in Egypt. A discussion of these points is to be found in the papers by O. Voetter, W. Kubitschek, and K. Regling on the sons of Gallienus in *Num. Zeitschr.*, 1908; but the evidence of hoards throws further light on the questions.

2. In the first place, it is clear that there was a complete break in the scheme of work of the Alexandrian mint at some point in the eighth year. Up to this time, coins were struck with obverse types of the various members of the imperial house and with the same reverse types for all: afterwards, in each year the reverse types of Gallienus and Salonina are distinct. In the earlier period, the obverse types usually, and the reverse types frequently, continued unchanged (except for the dates) from year to year: in the later there was almost every year an alteration in the obverse type of Gallienus, and fresh sets of reverse types were introduced annually, with rare exceptions of the continuance of the same type. There was a change in the obverse legend of Gallienus in year 8, and a very marked variation in the style and workmanship of the coins. This break may be fully seen from a summary description of the issues.

3. The obverse types of the various members of the imperial house up to year 8 are as follows:—

Valerian.—Legend throughout **ΑΚΠΛΙΟΝΑΛΕΡΙΑΝΟCΕΒΕΝC**. Bust r. laureate, wearing cuirass and paludamentum, with variations of position: in year 1, turned to show back (Fig. 1); in years 2, 3, 4, and 5, turned to front, with paludamentum thrown back (Fig. 2); in years 6, 7, and 8, turned to front, with paludamentum fastened across chest (Fig. 3). [I have an anomalous coin of year 7, on which the bust is as in years 2 to 5, and the legend ends—**ΝΟCΕΒCΕ** (Fig. 4).]

Gallienus.—Legend in years 1 to 5 **ΑΚΠΛΙΟΝΓΑΛΛΙΗΝΟCΕΒΕΝC**: in the course of the year 5 spelling altered to **ΓΑΛΛΙΑΝΟC** and continued so to year 8. Bust r. laureate, turned to front, wearing cuirass and paludamentum fastened across chest, throughout period (Fig. 5 for earlier, Fig. 6 for later type).

Salonina.—Coins first struck in year 3: type unchanged to year 8. Legend **ΚΟΡΝΗΛΙΑCΑΩΝΕΙΝΑCΕΒ**. Bust r. wearing stephane, draped (Fig. 17).

Valerian jr.—Coins in years 4 and 5. Legend **ΠΛΙΚΚΟΡΟΝΑΛΕΡΙΑΝΟCΚΑΙCΕΒ**. Bust r., bareheaded, wearing cuirass and paludamentum fastened across chest (Fig. 21): slightly varied in year 5 (Fig. 22).

Saloninus.—Coins in years 5 to 8. Legend in years 5 and 6 **ΠΟΛΙ-ΚΟΡCΑΟΝΑΛΕΡΙΑΝΟCΚCΕΒ**. Bust r. bareheaded, wearing cuirass and

paludamentum, turned to show back (Fig. 23); in years 7 and 8 legend altered to **CAVAΛ** and bust turned to front with paludamentum fastened across chest (Fig. 24).

4. It will be seen that the changes in obverse types were not frequent, and, as far as the legends were concerned, were of very slight importance, being merely variations in spelling. The legends of Valerian and Gallienus were on the same scheme: and the general impression produced is one of homogeneity. There is a tendency, especially after year 4, in the cases of coins of Valerian and Salonina, and more rarely those of Gallienus, for the legend to be interrupted over the head; but I do not think there is any significance in this fact.

5. The same impression of homogeneity is derived from a study of the reverse types. Those known to me are given in the following list: the letters denote the members of the imperial family for whom the types were used: A.=Valerian, B.=Gallienus, C.=Salonina, D.=Valerian jr., E.=Saloninus:—

Year 1. Head of Zeus r. (A. B.); Elpis advancing l. (A. B.); Homonoia standing l. (A. B.); Nike advancing r. (A. B.); Tyche reclining l. (A. B.); Alexandria standing l. (A. B.); Eagle l., looking back (A. B.).

Year 2. Head of Zeus r. (A.); Bust of Helios r. (A.); Athene seated l. (A. B.); Eirene standing l. (A. B.); Elpis advancing l. (A. B.); Homonoia seated l. (A. B.); Nike standing to front (A.); Bust of Sarapis l. (B.); Eagle to front, wings open (A. B.).

Year 3. Head of Zeus r. (A. B. C.); Athene seated l. (A. B.); Eirene standing l. (A. B. C.); Elpis advancing l. (A. B. C.); Homonoia seated l. (A. B. C.); Nike standing to front (A. B. C.); Bust of Sarapis l. (A. C.); Eagle to front, wings open (A. B. C.).

Year 4. Bust of Helios r. (A. B. C. D.); Homonoia standing l. (A. B. C. D.); Nike advancing r. (A. B. C. D.); Tyche seated l. (A. B. C. D.); Bust of Sarapis l. (A. B. C. D.); Eagle l., looking back (A. B. C. D.).

Year 5. Zeus seated l. (A. C. D.); Nike seated l. (A. B. C. D.); Tyche standing r. (A. B. C. D.); Bust of Sarapis l. (A. C. D.); Alexandria with head of Sarapis (A. B. C. D. E.); Eagle l., looking back (A. B. C. D. E.).

Year 6. Head of Zeus r. (A. B. C. E.); Nike advancing r. (A. B. C. E.); Bust of Sarapis l. (A. B. E.); Alexandria with head of Sarapis (A. B. C. E.); Eagle l., looking back (A. B. C. E.).

Year 7. Head of Zeus r. (A. B. C. E.); Athene seated l. (A. B. C. E.); Nike advancing r. (A. B. C. E.); Bust of Sarapis l. (E); Busts of Sarapis and Isis jugate l. (E); Alexandria with head of Sarapis (A. B. C. E.); Eagle l., looking back (A. B. C. E.).

Year 8. Bust of Helios r. (A. E.); Homonoia standing l. (A.); Nike standing to front (E); Eagle l. wings open (A. B. C. E.).

6. It is evident that up to year 8 the reverse types were used in common for all those in whose names coins were being issued at any time: there are a few cases where a type does not occur for all alike, but the gaps could probably be filled by a further search in collections: the chief of these gaps are in years 2 and 8, in which years the issues were comparatively small (see § 12). Further, the same reverse types were often continued from year to year: this is notably the case in years 2 and 3, and 6 and 7.

7. At some point in year 8 a fresh style of obverse legend was adopted in the case of Gallienus, and continued to the end of his reign, in the form **ΑΥΤΚΠΛΙΚΓΑΛΛΙΗΝΟΣΣΕΒ**. The marked contrast between the practice of the mint in the period before year 8, and that in the period after, has been mentioned above (§ 2); it will be set forth in more detail in the following paragraphs.

8. The obverse type of Gallienus, instead of remaining practically unchanged as it had done in the earlier period, was varied almost annually in respect of the position and draping of the bust; the changes are:—

Years 8-9. Bust in front view: paludamentum thrown back to show cuirass (Figs. 7, 8, 9).

Year 10. Bust in front view: paludamentum fastened over chest (Figs. 10, 11).

Year 11. Bust in back view (Fig. 12).

Year 12. Bust in front view: paludamentum thrown back (Fig. 13).

Year 13. Bust in back view (Fig. 14).

Year 14. Bust in front view: paludamentum thrown back (Fig. 15).

Year 15. (a) As year 14.

(b) Bust in front view: paludamentum fastened across chest (Fig. 16).

The obverse type of Salonina is less varied; the issues for her do not recommence after year 8 till year 11, and the type can be described in the same terms as that of year 3: but the treatment of the portrait is very distinct in the later period, and shows changes from time to time: the bust is always more spread than in years 3-8, especially in years 11 and 12 (Fig. 18); in year 13 a neater and more compact bust is found, and continues with slight modification to the end of the reign (Figs. 19, 20).

9. As regards the reverse types, in contrast to the homogeneity before year 8, there are only two instances after the resumption of the coinage for Salonina of the same reverse type being used in any year both for her and her husband, both of these instances being in year 11. Further, after year 9 it hardly ever occurs that the same reverse type is used in two successive years: there are exceptions in the early part of year 15, when the change in the reverse types, as in the obverse type, does not seem to have been made till some time after the beginning of the Alexandrian year. But, generally, the mint officials seem to have been careful to select a distinct set of types each year. A list of the types is given below.

10. There may be taken in conjunction with the foregoing considerations the fact that the fabric of the coins after year 8 differs rather markedly from that of the earlier issues: the flans are distinctly thinner and more spread. The execution of the dies, too, shows a change, especially in the treatment of the portraits on the obverse and in the lettering.

11. From the internal evidence of the coins, then, there seems to be reason to conclude that there was a break in the issues of Gallienus during his year 8. It follows that the coins of Gallienus of his years 8 and 9 should be examined more closely, to see how they can be fitted in with the facts ascertainable as to the interruption of his recognition in Egypt caused through the usurpation of power by Macrianus and Quietus.

12. Before proceeding further, however, it will be useful to set forth some data as to the relative sizes of the issues for the different members of the imperial house

up to and including year 8. The subjoined figures show the number of coins found in five hoards covering the period which I have examined:—

Year	1	2	3	4	5	6	7	8
Valerian	48	10	302	331	166	94	198	2
Gallienus	10	6	65	72	52	26	32	31
Salonina	—	—	7	52	29	13	43	3
Valerian jr.	—	—	—	53	16	—	—	—
Saloninus	—	—	—	—	1	5	42	—

From these figures it appears that up to year 8 the issues for Gallienus were on an average about a quarter of those for Valerian. The comparatively small number of coins of Salonina belonging to year 3 suggests that it was not until late in that year that the mint began to strike for her: after this year her coins are usually rather fewer than those of Gallienus, but in year 7 the proportions are reversed. The issues for Valerian jr. and Saloninus are on the whole rather less than those for their mother.

13. In year 8, however, the coins of Gallienus appear in far greater numbers than those of the others. But the 31 specimens included in the table are all of the later obverse type described in § 8: there is not amongst them a single example with the earlier type described in § 3. As a matter of fact, coins of Gallienus of year 8 with the earlier obverse type are distinctly rare: I have only seen one specimen. When the Alexandrian mint was striking concurrently for two or more members of the imperial house it normally kept the same proportions of issue for each from year to year, though there are occasional exceptions, as in the cases of Gallienus and Salonina in year 7: and it is improbable that, if the mint proceeded on the same lines at the beginning of year 8, when Valerian was still recognised, as it had done in the preceding seven years, hoards would contain more coins of Gallienus than of Valerian. It is much more likely that the coins of Gallienus of year 8 with the later obverse type belong to a period in the year when the mint was striking for Gallienus alone, as it did in years 9 and 10.

14. The reverse types used for coins of Gallienus of year 8 are, with the earlier obverse, only Eagle l, wings open: with the later, Head of Zeus r.; Athene seated l., Nike standing to front; Bust of Sarapis l.; and Eagle l, wings open. Of these, the eagle type, which is found with both obverses, occurs on coins of Valerian, Salonina, and Saloninus of the same year: the Nike type is shared by Saloninus: the other three are, so far as I know, peculiar to Gallienus in this year, though all had been employed before in this reign, and recur on coins of year 9.

15. The issues of year 9 are more complicated. The date on the reverse appears in three forms—**L Θ**, **L HA**, and **L ENATOV**. The last of these three is much the commonest: four hoards show 200 specimens, as against 1 of **L Θ** and 2 of **L HA**. It is the usual method of expressing the date "year 9" on Alexandrian coins: the employment of **Θ** as a numeral was often avoided, apparently on superstitious grounds, and **HA** is of course an anomalous form. The relationship of the three series requires some examination.

16. The published reverse types used in the three groups are:—

L Θ. Athene seated l. (F. 3058): Asklepios standing l. (B.M. 2174, D. 5227): Dikaiosyne standing l. (B.M. 2175): Elpis advancing l. (B.M. 2181): Homonoia standing l. (D. 5241): Nike advancing r. (F. 3057): Tyche standing l. (F. 3054): Tyche seated l. (F. 3055): jugate busts of Sarapis and Isis r. (D. 5263): Canopus r. (B.M. 2214, D. 5333; 5334): Alexandria with bust of Sarapis (D. 5225): Eagle r.,

looking back (F. 3060): Eagle l., looking back (B.M. 2223, D. 5278): Eagle l., wings open, looking back (B.M. 2224): Eagle l., wings open (B.M. 2233).

LHA. Head of Zeus r. (D. 5270): Nike standing to front (D. 5251): Eagle l., palm across (D. 5287).

LENATOV. Head of Zeus r. (B.M. 2153, D. 5271): Athene seated l. (B.M. 2169, D. 5230): Nike standing to front (B.M. 2191, D. 5252): Bust of Sarapis l. (B.M. 2208, D. 5260): Eagle l., palm across (B.M. 2235, D. 5286): trophy with bound captives at foot (B.M. 2239, D. 5274).

[The references given are to the British Museum Catalogue (B.M.) and Dattari's *Numi Imp. Alexandrini* (D.), with a few types in Feuudent's catalogue of the Demetrio collection (F.) which are not in the other two.]

The obverse types are as described above (§ 8): those of the **LHA** and **LENATOV** series are practically indistinguishable (Fig. 9): those of the **LΘ** series, however, have a slight difference from the others as a rule in showing more of the paludamentum on the shoulder of the bust, and are noticeably worse in execution (Fig. 8).

17. It is clear that the **LHA** and **LENATOV** series are closely related: in addition to the similarity of the obverse type, the three reverses found with **LHA** all occur also with **LENATOV**. Moreover, these two series appear to carry on from the coins of year 8 with the later obverse type: of the five reverse types of that series (see § 14), four are repeated in the **LENATOV** group and two in the **LHA** one: the remaining type of year 8, the eagle l. with wings open, which is the only one found also with the earlier obverse type of Gallienus of this year, is replaced in the course of year 9 by a variant position. On the other hand, amongst the numerous reverse types of the **LΘ** coins—remarkably numerous considering the rarity of individual specimens—only Athene and the eagle with open wings are common to coins of Gallienus of year 8, and only Athene to those of the **LENATOV** group: they also differ in respect of style from the **LHA** and **LENATOV** coins, the workmanship being inferior both on the obverses, as noted above, and on the reverses. In this point of style the **LΘ** coins approach closely to some of the coins of year 10, in which year there are two groups.

18. These two groups are broadly distinguished by the presence or absence of a palm on the reverse, the types being:—

Group A. Homonoia standing l. (D. 5242): Nike advancing r. (D. 5255): Tyche standing l. (D. 5266): Bust of Isis r. (B.M. 2212): Eagle l., looking back (B.M. 2225, D. 5279).

Group B. Homonoia standing l., palm to l. (B.M. 2183, D. 5243): Nike advancing r., palm to l. (D. 5256): Eagle l., looking back, palm to l. (B.M. 2226, D. 5280): Wreath enclosing legend ΔΕΚΑ | ΕΤΗΡ | CKV | ΠΙΟΒ (B.M. 2240, D. 5273).

The workmanship of group A. is poor, like that of the **LΘ** coins (Fig. 10): that of group B. is much better (Fig. 11). The last type on the list given is placed under group B. on account of its style, although there is no palm in the field.

19. So far as the internal evidence shows, the succession of the series in years 8, 9, and 10 would seem to be as follows. The issues of year 8 with the later obverse type of Gallienus are continued in year 9 by the **LHA** and **LENATOV** groups: the former was only a small issue, and the abnormal form of the date may have been due to a desire on the part of the mint officials to use up old dies with **LH**: this would apply at any rate to the Zeus and Nike types, and the examples

of the Zeus type which I have seen look as if the **A** were a later addition to the die: it would not however hold in the case of the eagle type, which is not found with the date **LH**: but some specimens of this type clearly have **HA** cut over **Θ** (Fig. 30); and perhaps the engravers, who had begun year 9 by using dies of **LH** altered to **LHA**, brought in a fresh type and dated it **LΘ**: then, their attention being called to the superstitious objection to this form of date, they amended it in the simplest way open to them by falling back on the anomalous **LHA**: but in succeeding issues they avoided the difficulty by writing **LENATOV**. The **LΘ** group stands quite apart, both in style and types: and it would seem reasonable to regard it as the output of a different mint from the **LHA** and **LENATOV** coins. It is true that there is no evidence to prove that there was ever any other mint than that of Alexandria in Egypt during the Roman period: but the disturbed state of the country in the eighth and ninth years of Gallienus may have caused exceptional arrangements. Group A. of year 10 would appear to belong to the same mint: but it is connected in types with Group B., which doubtless began when Gallienus entered upon his tenth regnal year, two or three months after the commencement of his tenth Alexandrian year: the addition of the palm to the reverse types was a recognised method of marking that an emperor had reached the tenth year of his reign.

20. The coins of Macrianus and Quietus, during their recognition in Egypt, break the series of Gallienus. They are all dated in year 1 (the coin in the British Museum, published as of year 2 of the elder Macrianus, is, as pointed out by Laffranchi [*Riv. Ital. Numism.*, 1907, 381] a tooled coin of Gallienus) and are of the following types, which occur for both princes:—

Homonoia standing l.: Nike standing to front: Eagle l., wings open.

These reverse types are found with obverses of Valerian, Gallienus (earlier type) or Saloninus of year 8: and the two latter also occur on coins of Gallienus with the later obverse type of year 8 and continue into year 9. So far as the reverse types are concerned, therefore, the mint officials seem merely to have transferred to Macrianus and Quietus some of the types which they had in use already, with the necessary alteration of date: and the coins of Macrianus and Quietus would appear to come naturally after those of Valerian and his family, and before those of Gallienus of the later obverse type of year 8. The style of the coins (Figs. 45, 46 of Macrianus and Figs. 47, 48 of Quietus) is distinctly that of the earlier, not of the later, issues of year 8 of Gallienus.

21. This arrangement, however, does not quite suit some of the evidence from papyri as to the period of recognition of Macrianus and Quietus in Egypt. The series of dates in P. Strasb. 6-8 gives these two emperors as recognised on 4 Phaophi, *i.e.*, 1st October, 260, only just a month after the eighth Alexandrian year of Gallienus had begun, and has another date of 3 Hathyr in their second year (30th October, 261), the first reappearance of Gallienus being on 4 Pharmouthi of his year 9 (30th March, 262). For the writer of this papyrus, therefore, Gallienus disappeared for over a year, and the only part of his eighth year in which he would be recognised in Egypt was the first month. But the dates in P. Strasb. 6-8 are distinctly confused, and perhaps hardly a safe guide: the recognition of Macrianus and Quietus in Phaophi of their first year is confirmed by P. Oxy. 1476, dated 2 Phaophi, and G.G.P., i, 50, dated 27 Phaophi: (the still earlier date of Thoth 1 of the first year in P. Flor. 273 is probably a later entry): but there is no other example besides P. Strasb. 6-8 of a date in the second year of the two

emperors, and a Theban ostrakon (Wilcken, G.O. 1474) is dated 30 Mecheir in the eighth year of Valerian and Gallienus, which suggests that in the spring of 261 Macrianus and Quietus were not recognised at Thebes.

22. If the dates of P. Strash. 6-8 are to be accepted, an explanation of the apparent discrepancies may be suggested. The evidence of the coins points to a small issue of Valerian and his family early in year 8, and a more extensive issue for Gallienus alone later in the same year, with series of Macrianus and Quietus between. Alexandria and its mint may have been lost by Gallienus by the beginning of October, 260, but recovered a few months later, before his ninth Alexandrian year commenced on 29th August, 261: the Fayum (from which P. Strash. 6-8 comes) may have still been held for Macrianus and Quietus till the autumn of 261: while the Thebaid may either never have been conquered by the usurpers, or may have reverted to the legitimate emperor at an earlier date; and in this case the **LΘ** series of Gallienus may have been struck in the Thebaid, while regular communication with Alexandria was interrupted by the forces of Macrianus and Quietus in Middle Egypt. As these two emperors controlled Egypt from Syria, it would be quite natural that their strongest hold should be in the eastern side of the Delta and Middle Egypt.

23. The later issues of Gallienus and Salonina after year 10 can be more summarily treated. In year 11 there are a few coins of Gallienus with the same obverse type as that of year 10, and a palm in the field of the reverse, as in group B. of that year: the reverse types found are Homonoia standing l., Sarapis standing l., and eagle l., looking back. But far the greater proportion of the coins of this year show a new obverse type, with the emperor's bust in back view; and on the reverse of these coins the palm does not appear. Presumably this is the later group, and the palm may have been dropped after the end of the tenth regnal year: the renewal of the issues for Salonina may have been contemporaneous with the adoption of the new obverse for Gallienus, as the coins of Salonina of year 11 do not bear the palm on the reverse. The types of this group are: for Gallienus, Bust of Zeus r.; Bust of Helios r.; Ares standing before trophy; Homonoia seated l.; Tyche standing l.; Tyche reclining l.; Sarapis standing between Nike and the emperor; Eagle r., wings open; for Salonina, Dikaiosyne seated l.; Homonoia seated l.; Tyche reclining l.

24. In year 12 the palm reappears on the reverses of all coins, both of Gallienus and Salonina, and henceforward is regularly used till the end of the reign, except where a palm forms part of the main reverse type, as for instance with figures of Nike holding a palm branch. The obverse type of Gallienus is varied, the bust being shown in front view, with the paludamentum thrown back so as to expose the cuirass on the emperor's chest: that of Salonina is practically unaltered from the type of year 11. The reverse types are:—for Gallienus, Athene standing to front; Homonoia seated l.; Tyche seated l.; Eagle to front, with wreath on outspread wings; for Salonina, Athene seated l.; Eirene standing l.; Elpis standing l. As noted above (§ 9) after year 11 the reverse types used for Gallienus and Salonina are always distinct: in year 12, as not uncommonly occurred at Alexandria, an increase in the total output of the mint was accompanied by a diminution in the number of distinct reverse types employed.

25. The obverse type of Gallienus changed back in year 13 to the later one of year 11, in regard to the position of the bust: that of Salonina was altered somewhat in details of treatment, and executed in better style. The reverse types are still few in number:—Eirene standing l.; Homonoia standing l.; Nike standing to

front: Eagle r., palm across, for Gallienus; Dikaiosyne standing l.; Nike advancing r.; Sarapis seated l.; Eagle l., looking-back, for Salonina.

26. Another change in the position of the bust on the obverse of coins of Gallienus was made in year 14, reverting to the scheme of year 12: the portrait of Salonina is hardly varied from that of year 13. The reverse types found are:—for Gallienus, Bust of Helios r.; Bust of Selene r.; Athene seated l. with shield by throne; Homonoia standing l.; Nike advancing r.; Bust of Sarapis r.; Eagle l., looking back; for Salonina, Elpis standing l.; Tyche standing l.; Tyche reclining l.; Bust of Isis r.; Eagle l., wings open.

27. The issues of year 15 began with the same obverse types as those of the preceding year, but in the course of the year the type of Gallienus was changed: the bust is still in front view, but with the *paludamentum* fastened across the chest. There is no definite alteration in the type of Salonina. The reverse types of Gallienus in this year with the earlier obverse are Poseidon standing l.; Bust of Helios r.; Bust of Selene r.; Athene seated l. on cuirass; Hermes standing l.; Two Nikae to front, holding shield; Bust of Sarapis r.; Horus standing l., with child before him; Eagle r., looking back. Half of these types are, like the obverse, continued from year 14. With the later obverse a fresh set of reverse types come in:—Nike advancing l.; Canopus r.; Eagle l., looking back; Agathodaemon r. The reverse types of Salonina are Dikaiosyne standing l.; Elpis standing l.; Tyche standing l.; Sarapis seated l.; Bust of Isis l.; Bust of Nilus and Euthenia jugate r.; Alexandria standing l.; Eagle r., wings open; Eagle l., palm across. As in the case of Gallienus, some of these reverse types are continued from year 14; and probably others were introduced at the same time that the change in the types of Gallienus took place: but it is not possible, on the evidence at present obtainable, to say which are the later types.

28. It is worth noting that there is a very marked improvement in the design and execution of the coins of the last two years. Until year 8 there is a dead level of mediocrity in the work of the mint, which had been degenerating steadily since the reign of Severus Alexander: the portraiture is uncertain, the types, as already mentioned, monotonous, and the legends often blundered. Thus of year 1 I have a coin of Valerian (Homonoia rev.) with legend—**ΟΥΑΛΕΡΑΝΟC**—, and one of Gallienus (Alexandria rev.) with—**ΠΛΟΥΓΑΛΛ**—; of year 3 coins of Valerian (Eirene, Elpis, and eagle revv., all from same obv. die) with—**ΟΥΑΛΕΡΑΝΟC**—; of year 4 two (Homonoia and Nike revv., same obv. die) with—**ΟΥΑΛΕΡΙΑΝC**—, and two (Homonoia and eagle revv., same obv. die) with—**ΟΥΑΛΕΡΙΑΝΟC**—; of year 5 one (Alexandria rev.) with—**ΠΛΟΥΑΛ**—; of year 7 one (eagle rev.) with the same mistake, and coins of Salonina with **ΠΟΙΚΟΡ**— (Alexandria rev.),—**ΟΥΑΛΕΡΑΝΟC**— (Alexandria rev.), and—**ΝΟΕΚCΕΒ** (Zeus, Nike, Sarapis, Alexandria, and eagle revv.). After year 8 there do not seem to be any more blundered legends, and some of the issues show better work, though side by side with them there are very poor examples (see § 17). From year 12 onwards the improvement in style is consistent, and by year 14 the mint had reached a higher artistic level than had been known for many years: in the next year the authorities evidently determined to abandon the old monotonous rotation of reverse types, and, besides reviving some which had been unused for a century (Canopus and Agathodaemon), and in addition modifying the attributes of such revivals (Poseidon and Hermes), they introduced two entirely novel types—the two Nikae holding a shield and Horus with a child.

29. The following table gives the numbers of coins of Gallienus and Salonina from year 9 onwards in four hoards (one of those used for the table of the earlier years having been completed about year 12 is excluded):—

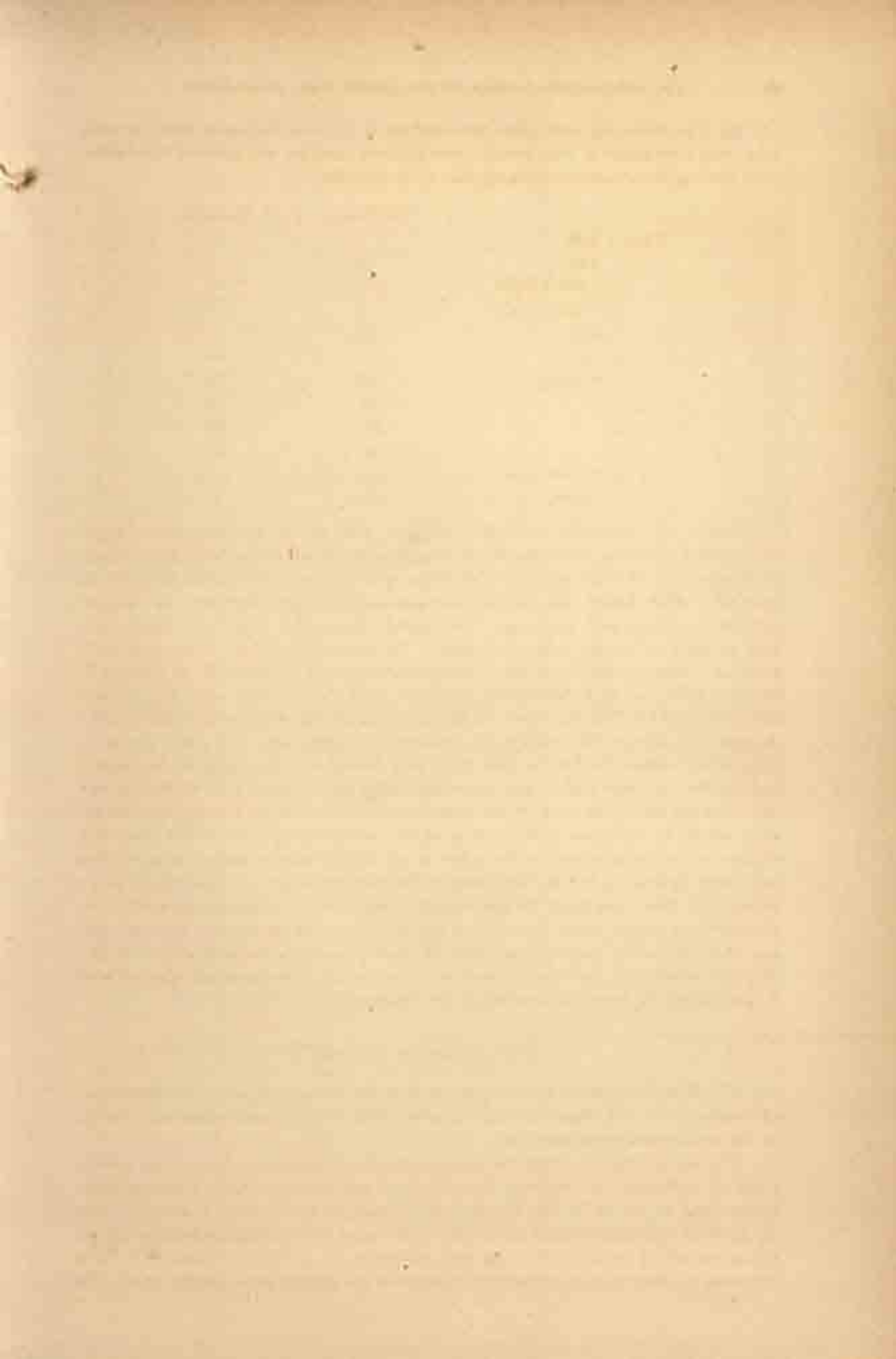
	Gallienus.	Salonina.
Year 9 LΘ	1	—
LHA	2	—
LENATOV	200	—
10 without palm	3	—
with "	115	—
11 " "	1	—
without "	146	67
" 12	191	180
" 13	307	284
" 14	396	528
" 15 earlier type	464	} 322
later "	103	

NOTE.—A document published in Vol. XII of the *Oxyrhynchus Papyri* (No. 1411) contains a proclamation of some interest in connexion with the coinage of this period. It is an order by a strategus, who is known from other evidence to have held office during the rule of Macrianus and Quietus, directing the money-changers to accept and exchange "the sacred coin of the emperors," which they were accused of having refused to take. The date of the order is unfortunately uncertain, owing to the breakage of the papyrus; but it is probably 28 Hathyr in the first year, *i.e.*, 24th November, 260, less than two months after the earliest certain date of the two emperors. The reason for the unwillingness of the money-changers to accept this coinage is a matter for conjecture: the most probable explanation would seem to be that they were doubtful of the right of Macrianus and Quietus to issue coins; and if, as suggested above, some part of Egypt was still held for Gallienus, they would have some justification in desiring to suspend what might be taken as a recognition of the usurpers. The mere fact that new effigies and titles appeared on the coins would hardly have troubled them, if they had been assured of the due authority of the new emperors: in the fifteen years before 260 there had been fifteen emperors, empresses, or Caesars represented on Alexandrian coins. The standard of the issues of Macrianus and Quietus also was not noticeably varied from that of their immediate predecessors: so the changers would not have feared loss on depreciation. On the whole, the political motive seems the best explanation of this proclamation.

DESCRIPTION OF PLATES.

The first Plate has been arranged to show the obverse types of Valerian (1-4), Gallienus (5-16), Salonina (17-20), Valerian junior (21, 22), and Saloninus (23, 24), in the succession explained above.

The second Plate is intended to illustrate the variations in style of the reverse types of Gallienus: of the coins figured, 25-28 are examples of the ordinary types before year 8; 29-32 belong to the transitional period of years 9 and 10; and 33-40 show the improvement of the last five years of the reign, especially 37-40, which are all of year 15: to these are added, in 41-44 four reverses of coins of Salonina of year 14, to give further evidence of the artistic merit of the year. For



ALEXANDRIAN COINS OF GALLIENUS AND FAMILY



ALEXANDRIAN COINS OF GALLIENUS AND FAMILY.



25



26



27



28



29



30



31



32



33



34



35



36



37



38



39



40



41



42



43



44



45



46



47



48

purposes of comparison with the series of Gallienus, 45 and 46 supply obverse and reverse types of Macrianus, and 47 and 48 of Quietus.

The illustrations are from coins in my collection.

J. G. MILNE.

LIST OF ILLUSTRATIONS.

(Obverse types.)		(Reverse types.)	
	Year.		Year.
1. Valerian	1.	25. (Gallienus)	Elpis standing l.
2. "	2-5.	26. "	Head of Zeus r.
3. "	6-8.	27. "	Homonoia standing l.
4. "	7 (abnormal).	28. "	Nike advancing r.
5. Gallienus	1-5.	29. "	Eagle l., looking back
6. "	5-8.	30. "	Eagle l., palm across
7. "	8 (later type).	31. "	Bust of Serapis l.
8. "	9 (date Θ).	32. "	Nike advancing r.
9. "	9 (date ENATOV).	33. "	Eagle r., wings open
10. "	10 (group A.).	34. "	Athene standing
11. "	10 (group B.).	35. "	Elyene standing l.
12. "	11.	36. "	Nike advancing r.
13. "	12.	37. "	Poseidon standing l.
14. "	13.	38. "	Bust of Seleue r.
15. "	14-15.	39. "	Athene seated l. on chair
16. "	15 (later type).	40. "	Horns and child
17. Salonina	3-8.	41. (Salonina)	Elpis standing l.
18. "	11-12.	42. "	Tyche reclining l.
19. "	13.	43. "	Bust of Isis r.
20. "	14-15.	44. "	Eagle l., wings open
21. Valerian (p.).	4.	45. (Macrianus)	Obverse type
22. "	5.	46. "	Homonoia standing l.
23. Saloninus	5-6.	47. (Quietus)	Obverse type
24. "	7-8.	48. "	Eagle l., wings open.

EARLY HIEROGLYPHIC READINGS OF SIR WILLIAM GELL.

THE following documents were presented by the late Miss Sharpe, of Highbury, to the Edwards Library, University College, London, and they are here published at the suggestion of Prof. Breasted. As one document dates from 1st January, 1822, it is of some importance as showing the state of the subject before the influence of Champollion. Other letters of various students to Gell that have appeared in the *Journal of Egyptian Archaeology* are of 1826-1829, and therefore after Champollion's work was known.

The first document is on a four-page sheet of note paper, 8 inches by 5 inches. The page 1 blank, page 2 on Rosetta Stone, page 3 cartouches, page 4 the end of a letter of Sir William Gell to "Dear Barone." The only Baron about in that company seems to have been Baron Uxkull, who was interested in translation (*J.E.A.*, 1915, p. 83), and later accompanied Champollion (*J.E.A.*, p. 84). That this portion of a letter accompanies Document 2, which has scribbled notes by Gell, rather suggests that it was held back by him and never sent. The sheet is now split down the fold, but the watermark shows the original union.

On page 2 Gell makes a bold attempt to equate two lines of the Rosetta Stone. He evidently split up the text by guess, without knowing the values of most of the signs, and much of the rendering is wrong; but he could read the whole cartouche of Ptolemy safely. On page 3 Gell gives two dozen cartouches, mostly wrong; the first two are obtained from the obelisk. Of the rest Memnon, Amensés and Ptolemy are about all that will pass muster.

On page 4 Gell is entreating the Baron to get material in Rome and send it on to Naples for study. These attempts show how very far Gell was from any real grasp of the subject.

For the sake of clearness each page of original manuscript is here given as a separate page of print, quoted entire without any additions on pp. 163-5.

[Page 2]

End of the Rosetta Stone. (Line 14.)

to prepare a pillar of hard stone with wrought letters proper for the gods of
 the country lastly . . . Greek. The priesthood declare it in order to set it up
 in temples of all kinds in Egypt in all first second third wheresoever wrought
 the image of the king

 Epiphanes Eucharistes.

(Line 6.)

lawfully ordained moreover to set up wrought another statue of the king

 P T O L E E O S immortal beloved of Phthah the god Epiphanes Eucharistes

 called by the name immortal

 P T O L O M A E E O S H

No. 1. End of the Rosetta inscription.

"This decree shall be inscribed on a prepared column of hard stone, in the sacred, the vernacular, and in the Greek character, and be placed in each temple both of the first, second and third (gods) wherever the wrought image of the king Ptolemy the immortal, beloved of Phthah the god Epiphanus Eucharistes . . ."

"ΣΤΕΡΕΟΥ ΛΙΘΟΥ ΤΟΙΣ ΤΕ ΙΕΡΟΙΣ ΚΑΙ ΕΓΧΩΡΙΟΙΣ ΚΑΙ ΕΛΛΗΝΙΚΟΙΣ ΓΡΑΜΜΑΣΙΝ ΚΑΙ ΣΤΗΣΑΙ ΕΝ ΕΚΑΣΤΩ ΤΩΝ ΤΕ ΠΡΩΤΩΝ ΚΑΙ ΔΕΥΤΕΡΩΝ . . .," *cætera desunt.*

No. 2.

"It is, moreover, lawfully ordained that another wrought statue of the king Ptolemaios the immortal the beloved of Phthah the god Epiphanes Eucharistes shall be set up, and called by the immortal name of Ptolemaios."

Specimens of the Trilingual inscription of Rosetta which has served as the dictionary of Hieroglyphics. It is published by the A.S.S. of London, and an impression in plaster was sent to Rome, where it is probably carefully hidden from antiquaries in the most secret of prisons—a public library.

[Page 3]

Thuthmosis.

Thoth
beginning
of name.

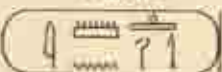
Mesphres.

Mes = Scarab.
Ph'ra = The Sun

Misphragmuthosis.

mes.
I = lot.

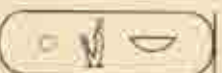
Tithous.



Eoa.



Memnon.



Amenses.



Heron.



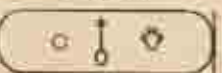
Ramesses.

Re = The Sun.
Mes = offering,
of which the scarab
is the symbol.
Shes = a pair, or
Remained.

Sesostris.



Pheron.



Proteus.



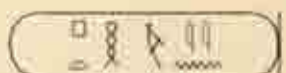
Amarnuphtes.



Anysis.



Psammeticus.



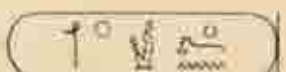
Nechao.



Psammis.



Macnuphtes.



Amasis.



Ptolemy, vid. Rosetta.



Berenice.







Philometer.







Arsinoe.

[Page 4]

In the Rosetta inscription the Greeks are called not Ellenēs but Ionians, thus
 OUEENIN  = OU,  = EE,  = a serpent, or ENEH,  N.

Arsinoë is probably made out of @, arshin = a lentil.

I wish you could go into some cellar or to the foundation of some house near San Lorenzo, in Lucina, and get the names  upon the obelisc, of which I am in great want—the obelisc of the Campus Martius I mean. The Sallustian obelisc, though in part copied, has in one of the phylacteries or  the throne of Osiris reversed, which shows it is false, thus .

Pray find out what is  a vase in Coptic, ancient or modern. I had mislaid this when Mr. Westmacott went to Rome. I have now got for you my work on the Troad—as to La Croze I have sent to London for it, as I can go on no longer without it.

There is another stone at Leghorn (Livorno) belonging to the great Drouetti, *pray pray* do what you can to get a copy of it; it has the Greek, Coptic, and hieroglyphic also as I understand. Have you no correspondent who would contrive this, or even a part of it, for love or money—Pray try. I will bring the Rosette inscription with me and the translations from the Greek and from the Egyptian—You will do much if you can get this copied at Livorno. I send this by Mr. Page from Constantinople whom I hereby present to you and beg you to patronise.

Ever, Dear Barone, yours,

WILLIAM GELL.

Naples, Jan. 1st, 1822.

The second document, 7.5 inches by 7.9 inches, thin paper, is the cover of a letter in the handwriting of Seyffarth.

"Al Chiarissimo Signore,
Il Signor Professore Nibby,
Via di Ripetta No. 210,
Roma."

Postmarks: "22 GENNAI" "CHAMBERY" and a partly illegible one, "... DA GENOVA," "C. F. 4 K."

On the inside of the sheet, memoranda in the handwriting of Gell as follow:—

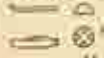
 appartenente a Sate per  olt pane,  aurea,
 dominatore,  regione,  Mente inferno,  Terra lavorata,
 et caetera,  et caetera,  Nectanebus, 
^(non l'è forse)
ostes nato  Aroeris,  Macedo,  K non è certo ma è più
che  A non è un K, — T quando non ce un  Dominus
D' norum.  P. Π.  Anima plurale.  great.  Amset. Dresser cholchytes Hierostolites.

Apparently Seyffarth wrote from Chambéry to Nibby at Rome. The letter was probably sent on to Gell, who used the cover for scribbling notes on hieroglyphs in the same fashion as he did on the sheet published in *J.E.A.*, 1915, PL XVII. Both the sheets of notes are clearly in Gell's writing. Unfortunately there is no date to these notes. Most of them are fairly correct, which suggests that they are rather later than the attempts on the Rosetta stone.

W. M. F. P.

SCULPTURE OF PTOLEMY I.

THE sculptured slabs of Ptolemy I (now in the Ashmolean Museum at Oxford) were found in 1894 in the temple of Koptos. They form part of an intercolumnar screen "between the eastern pair of columns, north of the Isis steps." They were described by Prof. Petrie (*Koptos*, p. 19), and the "Khonsu" standard was figured by Dr. Seligman and myself in *Mon*, XI, p. 166. Beyond this the sculpture has received no attention.

The scene represents the deified king, or his statue, standing in front of a rectangular object. He wears the crown of Lower Egypt, and holds a plain staff in his left hand. The rectangle is decorated on the top and along the right side with a border of *khoker*-ornaments, giving the appearance of the gates depicted in the Book of Gates. As the *khoker* represents the heads of papyrus above the top of a mud wall, it seems likely that this rectangular object is not a building but an enclosure, in all probability a sacred enclosure. Within the rectangle is a doorway across which a curtain is hung, pulled diagonally to one side. Above the king's head is the disk of the sun, with a uraeus hanging from each side. An *ankh*-sign is slung round the neck of each snake, and hangs low, so as to enclose a space in which is the word , *Behdeti*, "He of Edfu." In front of the king and facing him stands a small figure of the Anmutef priest, making an offering of incense with the right hand, and raising the left in the attitude of adoration. He wears the traditional costume of the Anmutef priest; the hair arranged in the long side-lock of youth, and a leopard-skin with the tail hanging down, covers the front of the body and the rest of the clothing. Before the king and behind the Anmutef are six standards, alternately high and low: they are placed in the following order—(1) Ibis, (2) defaced, (3) Hawk, (4) "Khonsu," (5) Upuaut with snake and ostrich feather, (6) Emblem of Min surmounted by two upright plumes. They face the same way as the king, and in early representations of a similar scene are carried by human or emblematic figures. In this example, however, the standards are stationary. Facing the standards is the figure of a woman standing. Her headdress consists of a long curled wig, partially covered by a vulture and surmounted by a low circular crown, from which rise two horns with a disk between: in her right hand she holds a papyrus sceptre, in her left an *ankh*.



SCENE OF PTOLEMY I., TEMPLE OF KOPTOS.

Nubian Sudan.

Oxford.

REVIEWS.

"*Emperor*"-worship in Egypt.—S. A. B. MERCER. (*Journal of the Society of Oriental Research*, Chicago, 1917). 8vo. 9 pp.

The evidence of worship of the king during his life is here described from the various sources. The first is a stele of adoration of Aohmes I, Nefertari *onkhti*, or living, and Amenhetep I. As the queen was living, her son was presumably alive at this adoration. Yet this is by no means certain: she was born about 1613 B.C., and Amenhetep I died 1541, when his mother was 72, if she survived. So it is not at all impossible that she might be living when both husband and son were deified as dead. Conclusions from epithets must be very carefully dealt with; at Gurob many steles of the adoration of Tehutmes III show the king with the epithets usual during life (*neb tani, neb khou, da onkh ma ra zetta*); and yet the names of the adorers, taken from Ramessu II, show that Tehutmes was dead centuries before. This much must be said in caution, without denying the adoration of the living king.

Another point must also be observed in the enquiry; the king at the *sed* festival became identified with Osiris, and would then naturally be worshipped, but is he adored as king before his Osirification? The instances of adoration of the king under Amenemhot III, Merenra, and Ramessu II, may all be after Osirification. The inhabitants of Niy adoring Amenhetep II in his first year are Mesopotamians propitiating a conqueror. The Ethiopians at Kubban may worship, but they are not Egyptians.

The best evidence of worship of the king is in the Harris Papyrus, where Ramessu IV puts in the mouth of his father the injunction to the people to bow to him, serve him always, adore him, implore him, magnify his goodness as they do to Ra. This must apply to the king at his accession, and before Osirification. The divine descent of the kings, as sons of Ra in the Vth dynasty and sons of Amen in the XVIIIth dynasty, would be naturally a basis for worship. Thus we may accept the thesis of Dr. Mercer, although much of the evidence which he adduces may not really support the worship of the king before Osirification.

Some useful cautions are given against attributing all our ideas of a deity to the word *uter* in Egyptian. This would be an anachronism like supposing that the Greek intended by *theos* all that we mean by "God." Both to the Egyptian and the Greek the gods were not far removed from men in time or in powers, they might die and be buried, and they were all subject to Fate like men.

Bas-reliefs from the Egyptian Delta. (*Bulletin of the Metropolitan Museum of Art*, March, 1917.)

These are two trial pieces, about 10 inches by 8½ inches, of rather peculiar work, one of a king's head, the other of titles. From the combination of the

titles *nesut buti*, vulture and uraeus, which was usual in the earliest dynasties and disappeared after the VIth, and from the style of the *an* sign, Mr. Winlock concludes that these may belong to a very early date. The king's head is peculiar for the striation of the whole crown of Lower Egypt, from top to bottom, a type not known elsewhere. The false beard is not only ribbed across, but striated with hair lines wavy all the length. This is a peculiar feature only known in the Old Kingdom; in late times the beard is merely smooth. The line of eye paint extends backward to the crown, which is also early detail, seen on the figure of Khosekhem in the IIrd dynasty. We would go a step further than Mr. Winlock, and say that the face, especially the nose, is so closely like that of Sa-nekht at Maghara, that it is probable that the work is of the IIIrd dynasty, perhaps of that king. The pieces are stated to have come from the Delta; this cannot mean far north, as all the early levels of the northern Delta are under water. Heliopolis would be the most likely source, especially as sculpture of Neterkhet was found there by Schiaparelli. New York is fortunate in getting pieces of such rare early sculpture.

The Egyptian Expedition, 1915-16. (Bull. Metrop. Mus., May, 1917.)

This is a record of the excellent systematic clearance at Thebes carried on under Dr. Lythgoe's direction. At the beginning of the long causeways leading to the temples of Deir el-Bahri, the courtyard of a large tomb of the Middle Kingdom has been cleared, having a colonnade along the side in which is the tomb entrance. Many other burials were cut in the rock along the sides and in the floor of the court. At the top of the filling were Ptolemaic tombs dated to Cleopatra II by a coin. Below these some large beads of Sheshenq "and numerous pottery figurines and vases in the form of horsemen and cocks." These will be important as dating other pottery figures, and the cocks must be the earliest examples in the West, pointing to their having been introduced by the Bubastite dynasty from Persia. A little lower was a foundation deposit of Ramessu IV, for a building of which only two column bases were left. Further down were traces of the lower temple of Hatshepsut at the foot of the causeway. It seemed that only the foundation deposits were laid down, and the south side of this temple had never been begun. This was over a mass of chips which filled the sunken square court of a large Middle Kingdom tomb. This appeared to be of the latter part of the XIIth dynasty. Many tombs of the family and household had been cut in the sides of the court; and early in the XVIIIth dynasty, pits had been sunk for burials, and little shrines built above them. Such are very rarely found preserved, as at Hawara (*Roman Portraits*, XVII, XVIII). In one of these early burials is a very unusual painted stele, representing two brothers(?) seated face to face embracing each other, Amenemhot and Antef; a sister or wife, Ay, is behind the former; an aunt, Hapy, stands making the offering behind Antef. The tombs in the side of the court had been repeatedly used, until one contained no less than thirty-three coffins crowded in, one on the other. These were painted with feather pattern, and probably of the XVIIth dynasty. The gold beads found were of the style of those in the burial in *Qurneh*. A four-stringed lute was also found.

The pit tombs in the floor of the court were the richest. They were clearly of the early XVIIIth dynasty, and necessarily before Hatshepsut who built over the court. Some of the side tombs were also as late as this, as they had tubular kohl pots. The largest tomb chapel, with an enclosure round it, was for a superintendent, Khay. The burials continued to the reign of Tehutmes III, as a scarab

of his was found in this pit, a matter hard to reconcile with Hatshepsut building over it. It must be supposed that such scarabs were made during the reign of Hatshepsut.

Another pit proved to be the more valuable. The pottery was white with red and black painting, characteristic of the age of Tehutmes III. Beside more usual objects, there was a glass hairpin with rosette head, the earliest glass pin known; a kohlbox with a bronze hinge to the lid, of modern type; a massive porphyry bowl of the 1st dynasty, evidently reused; and a fine bronze sword with handle of inlaid wood. On one burial was a heart scarab, with human face; it was mounted in gold plait border with T-shaped straps on the back. The engraving is between the styles of Nos. 8 and 9 in Pl. XLVII of *Scarabs*, and thus it justifies the dating of those to the XVIIIth dynasty. A very peculiar weapon found by a boy is called a two-handled sword. It seems to be a patchwork of a large bronze spear-head, like that of Karnes, to which has been fitted a wooden handle covered with sheet gold. In the drawer of a game board were two knuckle bones along with twelve draughtsmen, showing how the value of each player's move was determined. A fine lyre was also found here. Altogether this is a very interesting variety of objects, closely dated, and the full publication of them is the next duty of the finders.

The following section deals with the clearing of the tomb of Puamira by Mr. N. de G. Davies. After the usual trouble with native squatters, the whole of the court of this tomb was acquired and cleared; the fragments of the sculptures were collected, and over two hundred of these have been rebuilt into a restoration of the walls. The sculptures are of the best style of the XVIIIth dynasty, but the sarcophagus in the well below was a very clumsy mass, only vaguely following the human form. So disappointed is Mr. Davies that he does not even mention the material. The forty excellent illustrations and plans are most welcome, but we hope that they will not be allowed to excuse a full publication. Why should not the work of the winter 1915-16 appear in full by May, 1917? The English volumes do not take longer than this to be issued, at least before the war.

Museum of Fine Arts Bulletin. Boston, June, 1917.

This contains the report of Dr. Reisner's excavations of 1915-16, more than a year before. The temple of Amen and the royal pyramids at Napata, the Ethiopian capital, were explored. The pyramids had not been entered in modern times, and their system was unknown. Now it is found that the entrances are far out from the pyramids, some metres beyond the door of the pyramid chapel on the east side. Twenty-five pyramids were cleared, but all had been completely plundered anciently. Only in one, where a fall of roof threatened, was found a hinged bracelet of gold, of the usual Ethiopian style. Further, one of the fourteen pyramids of Nuri was opened, and found to be the tomb of the well-known king Aspalut. In it were alabaster vases, gold cylinders, beads, etc., left by plunderers. It is hoped that the other Nuri tombs may yield more.

The temple of Amen is described as extensive, equal to any temple in Egypt after Karnak. In front of the pylon, was found, beneath a Meroitic level of building, a deposit of broken statues of kings, from which was built up a figure of Aspalut, and another of Tirhaka, all but the head. On the opposite side of the temple, in a clearance, was found another group of broken statues, from which came the head of the previous Tirhaka statue, and other figures of Tanutamen, Amenanal and Senka-amen-seken, with headless figures of Amenanal, Queen Amen-mer-nefer,

and two of Tanutamén. The work of these is stated to be of the full Egyptian style, except that Senka-amen-seken shows some falling off.

Five temples were exposed by the clearances, and all of them had been rebuilt at various periods. The earliest foundation was of Tehutmes III, shown by inscriptions, and Tehutmes IV, by foundation deposits. The latest work is late Meroitic. In the great temple five periods of building were traced.

A temple attributed to Senka-amen-seken, by his name on the pylon, proved to have been built by Atlanersa. The altar was dedicated by him, and many votive offerings and statuettes were found here. The temple had been smashed twice over by a fall of the cliffs above burying it; in this way much more was left of the smaller objects than on an exposed site.

Egyptian Records of Travel in Western Asia, Vol. II.—DAVID PATON. 60 pp. 1916. (Princeton University Press.)

Mr. Paton has now published the second volume of his *Egyptian Records of Travel in Western Asia*. The accuracy of detail as shown in the complicated system of setting forth each text with references to its every publication, the mass of numerals and variations of lettering in the transliteration, the wealth of detail, are amazing. Whether the result is commensurate with the vast amount of care and time bestowed upon it is another matter. For the student a book of reference, such as this is intended to be, should be simplified as much as possible; otherwise its value is always lessened, sometimes even destroyed. This is most markedly the case in regard to the column devoted to transliteration. This column is a monument of anxious and careful labour, of meticulous precision, of extraordinary accuracy, but the practical result is that no one will use it. No one has the time to spend in patiently reversing the numerals into hieroglyphs with the aid of the sign-list in Erman's Grammar; it takes too long and is not worth while. If Mr. Paton had only given the signs themselves instead of the transliteration, and had expended the same amount of care in making the publication accurate, that column would have been the most useful in the whole book. It is difficult to know whether Mr. Paton intends his book for advanced students or for beginners. If for the former the elementary information—such as the general description of tombs on p. 17, and the phrase "In the Orient the Shepherd follows his flock," on p. 38—are out of place, while for the beginner the subject and arrangement are unsuitable. The needs of the two classes of student are quite distinct, and an author should be very clear as to which class he wishes to address his work. Though by means of its faulty arrangement the book may fail in its aim of being the standard reference book on the historical geography of Western Asia, yet the pains and labour bestowed upon it are not thrown away, and Mr. Paton will rank as one of the most accurate scholars that America has produced.

M. A. MURRAY.

Antiquités en fer et en bronze, leur transformation . . . et leur conservation.—G. A. ROSENBERG. 8vo. 92 pp., 20 figs. Copenhagen. 1917.

This useful work is published by the Fondation Carlsberg. The main line of it is the detailed study of the compounds of iron and copper that are formed, and the proper treatment of them. The various sources of decomposition are stated, and the changes that can be experimentally produced. Chlorine is the great enemy of all metals; in no way can it be rendered harmless in combination, and it must be removed by some means. A new process here is the testing by damp air.

In a glass jar with moisture, iron or copper begins to sweat out deliquescent salts, the appearance of which is detailed as showing the nature of the compounds involved.

In the most usual case of iron, which is a metallic core with much oxidation crusted over it, the method adopted is to pack with asbestos paper and bind up closely with iron wire. Heat red-hot for 15 minutes, thus driving off most of the chlorine. Plunge red-hot in saturated solution of alkaline carbonate. Boil in that, 2 to 6 hours. Boil in distilled water, 12 hours. Soak in water slightly alkaline; next day in distilled water. Heat, and put in superheated paraffin wax at 260° F. until no bubbles arise, 6 to 14 hours. Unwrap and clean off surplus wax. A special cement is described for paraffined fragments.

For bronze, the detection of a dangerous chloride patination from a harmless carbonate patination is done in the damp-air chamber. The varieties of patina are fully described, but as they are usually mixed, no single treatment is entirely applicable. The writer objects to the drastic stripping of bronzes by electric reduction, as advocated in Berlin. He has devised a process for the reduction of dangerous patches of chloride, without any alteration of the harmless carbonate. This is by wrapping in foil of tin, aluminium, or zinc, and placing in damp air. The chlorides sweat out and are immediately decomposed by the foil. In order to ensure action, any thick lumps must be cut open, or drilled into with a dentist's drill. To prevent the deliquescent chlorides soaking on to the rest of the metal, a jelly may be put over the object which only retards the action, but allows the chlorides to pass through freely. For local treatment of patches on large objects a plaster may be made of tin, zinc, or aluminium powder, mixed with $\frac{1}{2}$ per cent. glue, 5 per cent. water, and 2 per cent. glycerine, and laid on to the dangerous parts. Thus the processes here are strictly conservative, and remove nothing that can be left safely in place. They are applicable to the better preserved objects, and do not touch the cases of those which need stripping. The writer does not seem to have studied the condition of the metal as a mixture of two or more alloys, one of which will always tend to change by contact with the other, and one of which may be entirely removed, leaving a sponge of metal.

Atlantis.—PIERRE TERMIER. (*Smithsonian Report*, 1915). 8vo, 16 pp. Washington, 1916.

The Director of the Geological Survey of France gives here an outline of the subject of Atlantis, which has for many minds a fascination like that of Perpetual Motion or the Lost Tribes. That there have been great shiftings of land and water in later geologic times is well known, and will be familiar to every reader of that delightful little book, Gadow's *Wanderings of Animals*. Down to the Middle Tertiary Age, Africa and South America were connected. The Atlantis question turns on whether there were any lands which sank into the Atlantic within human tradition, and which could have given rise to the account of Atlantis, embellished by Plato. As the Atlantides were said to have ruled over the South Mediterranean, including Libya and Egypt, the question concerns us here.

A zoologist, M. Louis Germain, studied the subject of the distribution of plants and animals bearing on the Atlantis question. The present territorial fauna of the archipelagoes of the Azores, Madeira, Canaries, and Cape de Verde, are of continental origin, with indications of adaptation to desert life. They are linked with the Mediterranean region, but differ from the equatorial African. The latest

deposits of the Canaries—quaternary—are like those of Mauretania, with the same mollusca. Several other connections of rather earlier period, between Africa and the West Indies, do not touch the recent, or human, period. It seems, however, very probable that the Atlantic islands were still linked to the African coast long after man had spread on the earth, and hence a tradition of a great submersion might well have survived.

Catalogue of the Collection of Greek and Roman Antiquities in the possession of Lord Leconfield—Hon. MARGARET WYNDHAM. Sm. 4to, 142 pp., 86 plates. 1915. (Medici Society.)

This catalogue contains one bust with an Egyptian interest; it is of a boy consecrated to Isis. The mark of consecration is the thick mass of hair projecting on the right side of the head, while the rest is closely cropped. It is attributed to the third century A.D., but is early in that period by the quality of the work. As a mark of the devotion to Isis in Italy this is another link of the orientalizing of the West. The catalogue should be mentioned as one of the most perfect examples of the utilisation of a private collection; the photogravure plates are excellent, and the lighting good, though it might have been better from the top in some cases; the text is concise and sufficient. In every point it shows a dignified utility without frivolous luxury. The only regret is that it is limited to an edition of 200 for private circulation. At least it can always be used in the Yates Library at University College.

PERIODICALS.

THE second part of Vol. XIII of the *Bulletin de l'Institut Français d'Archéologie Orientale* has been issued under the direction of M. Georges Foucart. More than fifty of its pages are filled by an essay by M. Georges Daressy upon the geography of Egypt, from the time of the Mahomedan conquest, as illustrated by an Arabic work entitled *The Book of the Buried Pearls*, which professed to give a catalogue of sites whereat hidden treasures might be found. These include, not only old Egyptian temples and other ruins, but also Christian churches and monasteries, caves and grottoes, and certain hills, mounds and lakes.

The Book of the Buried Pearls and of Precious Mystery, which was republished from three manuscripts some ten years ago by Ahmed bey Kamal, is, doubtless, an imposition upon its readers; but a work promising to foretell places where buried treasures may be expected to be disinterable, especially in a country such as Egypt, was certain to find credulous purchasers. How much destruction of monuments and remains of ancient art its pages have been responsible for, we shall never know.

M. Daressy is utilising the only feature of the text that can be made useful for science, in endeavouring to decide both the ancient and the modern names of the Arabic titles it gives for many of the sites it enumerates. For this purpose he has searched the works of Makrisi, Abu Saleh, the *Geography of Coptic Egypt*, by M. Amélineau, and all modern topographical treatises and maps. He does not mention the *Geography of Lower Egypt at the Coptic Period*, by the younger de Rouge, but doubtless made use of that excellent little work. Many of M. Daressy's identifications are, however, derived from his own erudition.

It is uncertain whether the author, in mentioning edifices at certain sites, knew they were still in existence, even if mostly ruined, when he wrote, or whether he was merely a copyist of older gazetteers, and the monuments may have disappeared before his time. For instance, at Bahnasa, the ancient Oxyrhynchus, he gives the church of "Nestor." This M. Daressy points out should be Christopher. Abu Saleh misnamed it Istafoura. In the Synaxarium it became Akhristofares. There is no trace to-day of this or any other edifice of ancient times at Bahnasa.

Doubtless there is some method, or excuse in certain instances, for the promise of wealth for fortune hunters who follow the author's advice. Thus he states that at (Tel) el-Farain "If you search you will find a coffer containing treasure, coins and jewellery." Now one of the mounds of this Tel is called the Kom el-Sagha, or jewel mound. This must have arisen from a "find" there at some time, probably before the composition of the *Book of the Buried Pearls*, whose author, knowing of the occurrence, prophesied further results of the same character.

The article of M. Daressy is only the first upon this subject, and so further comment is postponed for the present. On this occasion he provides three maps, the last reaching as far south as Sohag.

Another very interesting paper in the *Bulletin* is M. Henri Gauthier's "La Nécropole de Thebes et son Personnel," which treats of the religious fraternity, or Association of Employees connected with the Theban necropolis, who seem to

NOTES.

IN Dr. W. D. Spanton's most interesting and charmingly illustrated account of the "Water Lilies of Ancient Egypt," in Part I of *ANCIENT EGYPT*, 1917, we do not find mention of the use of these flowers in painted pavement decoration. Many such specimens can be seen in the Museum of Antiquities at Cairo, on the walls of a secluded upper gallery. These plaques were brought from Akhenaten's Palace at Tell el-Amarna. The beaten earthen surface of the floors of halls of reception here was thickly covered with lime to make a stucco pavement. The smooth surface was then painted over with varied designs representing waterways, with aquatic birds and beasts among the vegetation; the clumps of grasses, flowering plants, and oxen running among the reeds, are all depicted in various colours. Lotus and papyrus are frequent, and the colour scheme is rather peculiar. Painted on a white ground, red, blue, and green predominate. Foliage and stems green with red and blue flowers. The Lotuses were mostly blue with red sepals and edge to the floral cup; some were green with a red edge, buds were painted similarly with green stalks. Among many other forms of plants, which we need not discuss, were red poppies and blue cornflowers (see Petrie, *Tell el-Amarna*, Pls. II, III, IV).

On page 3 there is a brief allusion to the sepulchral wreaths, specimens of which can be studied in the same galleries. The elaborate method of formation of these wreaths is very striking, and accounts for their having been preserved intact from the time of the XIXth dynasty to the present day. They were many yards long; on a firmly plaited palm-leaf fibre foundation were tied a close succession of leaves of *Mimusops Kummel*, a tree belonging to the family *Sapotaceae*, with large oval leathery leaves. Each mimusops leaf is carefully split and folded, and tied to the foundation with a narrow thong of fibre, and within each leaf and projecting beyond it is placed a petal of *Nymphaea Coerulea*; these petals are marvellously preserved, smooth and flat, and have dried from the rather thick fleshy substance to a thin membranous tissue, in colour either brown, pale brown, or nearly white. When the mummy of Rameses II was re-decorated during the XXth dynasty, the new mimusops wreaths were adorned with petals of *Nymphaea Lotus*, which can be distinguished from the blue one, in the dried state, by a more distinct veining. Many other flowers were used as well as water lilies, as the sweet-scented "sunt" (*Acacia Nilotica*), but we restrict our remarks to the Lotus.

ELEONORA ARMITAGE.

The following Index was in preparation for this number long before there was any idea that printing would be suspended by the war. It is intended to give an index every four years, as being the most convenient interval for reference. The white covers should be bound in with the parts, as being the title pages and contents. The summaries of Journals will be resumed from the present point when the next number can be issued.

SCOTTISH WOMEN'S HOSPITALS. LONDON UNITS.

IN the last number, we announced the collection of funds from members of the British School of Archaeology in Egypt for the London Units of the Scottish Women's Hospitals. I would also invite the help of readers of this journal towards the maintenance of these hospitals.

The list of donations issued in August amounted to £237 6s. 6d. I append a second list amounting to £227 8s. 11d.:-

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Total up to present date	£464 15s. 5d.

The Edinburgh Units.—The Scottish Women's Hospitals were founded by Dr. Elsie Inglis and her colleagues at the outbreak of the war, and have served gallantly in many countries of the Allies. They began work for the Belgians at Calais, and other Units were equipped and sent forward to serve the French at Royaumont and Troyes; then Dr. Inglis took her own Units to Serbia, and other Units have served in Greece, Macedonia, Corsica, and elsewhere.

The hospital at the Abbaye de Royaumont, under the French Red Cross, has been considered one of the best in France. A hut hospital is now placed in advance, near the firing line. Three canteens have been established in this part of France.

The hospital at Troyes was under the French Command, and was the earliest hospital under canvas in France. By request of the military authorities it accompanied the French Expeditionary Force to Salonika. An orthopaedic department has lately been added.

At Ostrovo there is a hospital, supported by American contributions, which has an advance station up country, near the firing line, and Transport Column attached.

A hospital for tubercular treatment for Serbians is being opened in the south of France.

In Corsica the Scottish Women's Hospitals relieve Serbian refugees.

The London Units.—Dr. Elsie Inglis' Serbian campaign, 1915-16, was a triumphant effort, which seems like an epic to those who watched it. Her hospitals were justly famed. Typhus was beaten back, and the Serbians will never forget our doctor's name. A fountain at Mladnovatz, commemorating her work, still remains.

The next campaign, 1916-17, was in Rumania, where her hospitals and Transport Column were attached to the Serbian Divisions, and suffered with them three retreats. After an interval of work for Russians she rejoined her Serbs, and the crowning feat of her life was the removal, in spite of every obstacle, of these Serbians out of Russia. Then, November 26, her life was laid down.

Dr. Inglis' last wish was to dispatch new Units to serve those same Serbian Divisions in their new destination. She contemplated a base hospital of 200 and field hospital of 100 beds, with motor transport for both, and a staff of five doctors and forty sisters and orderlies. Our advance Unit and equipment will go forward at once, and it is to provide and maintain reinforcements that help is required.

H. FLINDERS PETRIE,

Hon. Secretary,

London Units Scottish Women's Hospitals.



University College,
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