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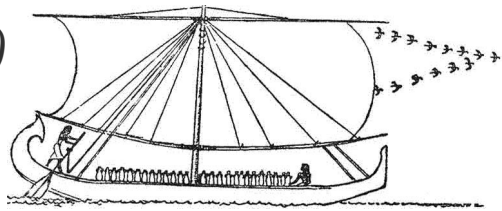
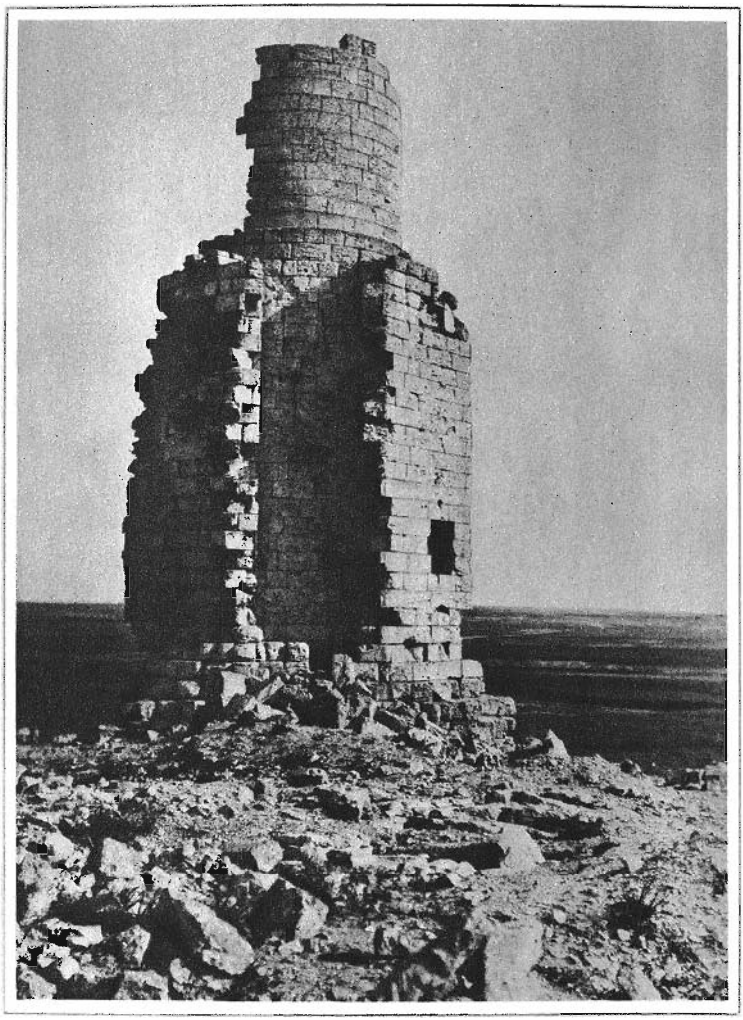


MAREOTIS



THE PTOLEMAIC TOWER AT ABU SIR
KNOWN AS ARABS' TOWER

Photo : Dr. Henry Maurer

MAREOTIS

BEING A

SHORT ACCOUNT OF THE HISTORY
AND ANCIENT MONUMENTS
OF THE
NORTH-WESTERN DESERT
OF EGYPT
AND OF
LAKE MAREOTIS

BY

ANTHONY DE COSSON

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DULCI MEMORIÆ

NINÆ BAIRD ET NOWELLI DE LANCEY FORTH

ARABUM GENTIUM STUDIO ET

MAREOTIDIS REGIONIS AMORE PARIUM

QUORUM

ALTERAM CALEDONIÆ MAGNANIMAM PROLEM

ANNO MCMXIX

ALTERUM GENEROSUM DE AUSTRALIA MILITEM

ANNO MCMXXXIII

MORS ADEMIT

S. B. R.

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MAREOTIS

I

Introduction

THIS slender volume, which will interest a limited public, is an attempt to gather together the topography and sparse, authentic details of history of the district of Mareotis, and it puts forward various suggestions, which, with the criticisms I trust it may encourage, will help us towards understanding a subject of which so little is known at present. I find it surprising that Mareotis, the close neighbour of the great and ancient city of Alexandria, has no collected work on its history, yet the town of Mareotis, or Marea, was more ancient than Alexandria itself.

It is a natural development, following improved communication, that the people of Alexandria should seek more and more the open country and pure air of Maryut as a relief from the crowded city and congested suburb of Ramla. Fifteen or twenty years ago the Maryut was known to few people as, prior to 1914, one had to take the train from the terminus of the Khedive Abbas's railway at Wardyan, then a considerable distance by carriage from the residential

quarters of Alexandria. After that date, when the State bought the Khedive's Maryut railway, the visitor to the desert took train from Alexandria or Nuzha, but it was not until 1917 that the first motor road was completed between Alexandria and the Western Desert by Mr. W. E. Jennings-Bramly, then district officer in the Frontiers Administration.

Two thousand years ago in Græco-Roman times the villas and country retreats of the richer Alexandrines were on Lake Mareotis, and there were places of recreation in the district where the people enjoyed themselves. Then the means of communication was by boat from the Portus Mareotis on the south side of the city, and one sailed along the western arm of the lake to Marea, or Taposiris, or to one of the numerous other places which existed by the waterside. Now this part of Lake Mareotis is a mud flat and mirage.

One hopes that, in its modern development, the Maryut will not become vulgarised ; already the Beduin show signs of becoming spoilt, the flowers and bulbs are uprooted, and the young birds, which are hatched in the crops in spring, are maimed for sale to the Alexandrine motorists. If any reader would help to combat this tendency to trade in the birds and flowers by refusing to buy them from the Beduin, then this little book has not been written in vain.

I have made scarcely any attempt to describe

the attraction and fascination of the Maryut; probably the most perfect thing written about this country is to be found in the chapter headed "The Solitary Place" in E. M. Forster's *Pharos and Pharillon.* There the beauty of the country in the early spring is described by the most finished pen in England to-day; we must indeed be grateful for it.

Books dealing with the Maryut are difficult to come by. None of the libraries in Alexandria have Pacho's *Relation d'un Voyage dans la Marmarique et la Cyrénaïque* (Paris, 1827), and there is only one copy of Mahmud Bey el Falaki's *Mémoire sur l'Antique Alexandrie, ses Faubourgs et Environs* (Copenhagen, 1872). Both works are practically unobtainable, and so is Aubrey Weedon's excellent "Report on the Maryut District," in volume vi. of *The Cairo Scientific Journal* (1912). One might add Captain Claud Williams' confidential *Report on the Military Geography of the North-Western Desert,* published in 1919. This officer was one of the most experienced pioneers in motoring in the Western Desert some seventeen or eighteen years ago. Bayle St. John's *Adventures in the Libyan Desert* (London, 1849) and Scholz's *Travels* (London, 1822) are fairly easy to find. Forster's *Alexandria: A History and a Guide* (Alexandria, 1922), is already out of print, but Breccia's *Alexandrea ad Ægyptum* is still obtainable.

Perhaps the most interesting book concerning, in part, Mareotis is the superb volume—*The History*

of the Monasteries of Nitria and of Scetis, by the late Hugh G. Evelyn White. As this book (published in 1932 by the Cambridge University Press for the Metropolitan Museum of New York) is limited to 500 copies, it will not be long before it is out of print. It is of first importance, and not only is it a history of the earliest monasteries, "but also the account and picture of the nature, spirit, ideals, features, of this earliest phase of religious life in the Christian Church." Most important is the chapter on the topography of the Mount of Nitria, which is now definitely proved not to have been in the Wadi el Natrun (which was Scetis), but in the eastern part of ancient Mareotis.

The forthcoming publication of Professor P. E. Newberry's work on the ancient cultivation of olive trees in the Maryut and the country west of it will give us a great deal of most interesting information, collected over a number of years, by this learned Egyptologist. To him I am deeply indebted for help and encouragement.

I have been singularly fortunate in having the ever-ready help of Dr. Henry Maurer of Alexandria, who has provided the fine photographs.

Finally, I am most grateful to Professor F. W. Oliver for his very valuable note on the wild flowers of the Maryut, which appears at the end of this book.

II

Dawn before History

IN remote prehistoric times when man first arrived in the Maryut, the Libyan desert was an immense tract of grass.

Archæological evidence for widespread prehistoric habitation of the now waterless wastes of the Syrian, Arabian, Libyan, and Saharan deserts is too well known to need elaboration here. We may accept it as proved. . . .

So write Miss Caton-Thompson and Miss Gardner, in a most interesting paper on the country round Lake Qarun.[1]

In such a grass-land, between 9000–6000 B.C., may be sought, we believe, the still obscure origins of Neolithic arts—the development of pastoral semi-nomadic people. The arrival of such people in the Faiyum, which we have already suggested happened some centuries earlier than 5000 B.C., may be supposed to be the result of increasing stringency of pasturage and hunting, attendant both on diminishing rainfall over the open plains, and increasing requirements in a scale of living rendered more

[1] *The Geographical Journal*, vol. lxxiii. No. 1, Jan. 1929, pp. 20–60—"Recent Work on the Problem of Lake Moeris."

complex by the comparatively recent discovery of agriculture.

The same movement must have affected the Maryut when the decreasing rainfall drove these peoples towards the Mediterranean coastal belt and the Western Delta lands up to the Canopic branch of the Nile. It is clear that this restriction of grass-land in the great interior tracts, owing to the gradual falling off of the rainfall, led to the concentration of the population in restricted rain or Nile-water fed areas, making cultivation of crops a necessity. Therefore in prehistoric times the Maryut district was probably thickly populated by these semi-nomadic herdsmen with their flocks of goats and sheep ; their asses and oxen. Besides tending their herds, they engaged in hunting and began the earliest form of agriculture ; it is probable that they sheltered in tents and portable huts made of the stems of asphodels or reeds wattled together.

Dr. Ball[1] tells us that there is a wide distribution of stone implements over the whole of the vast area of the Libyan desert : " Grinding-stones, often with a sort of stone rolling-pin, unpolished celts, knives, and arrow-heads are the principal forms of implement I have met with."

The people who used these implements " must have formed large communities in regions which

[1] *The Geographical Journal*, vol. lxx. Nos. 1, 2, and 3, 1927—" Problems of the Libyan Desert."

to-day are too dry to support human life. Palæolithic man in the deserts of Egypt never knew desert conditions, all evidence pointing to rainy conditions accompanying his existence."[1] But "desert conditions became serious in the northern part of Egypt fairly late in Palæolithic times."[2]

The joint authors of the previously quoted paper have shown that agriculture was practised in early Neolithic times, at any rate near Lake Moeris (Qarun). Not only did the implements discovered prove this, but they found and excavated no less than 117 Neolithic granaries near the lake—the earliest evidence of corn-growing yet known.

Professor Newberry has pointed out that in very early times olive trees were growing in profusion in the Maryut and west thereof, and this country was known as Tehenu (or Olive Land). We may conclude that at the beginning of history there was, possibly, a forest belt along the western Delta, and certainly along the littoral, inhabited by Libyan semi-nomadic herdsmen who may have cultivated crops on the western borders of Lake Mareotis.

This identification of the word Tehenu with "Olive Land" has, I understand, been questioned by certain French Egyptologists and pseudo-Egyptologists, although accepted by so fine an

[1] Colonel Meinertzhagen, *Nicoll's Birds of Egypt.*

[2] Dr. K. S. Sandford at the R.G.S. on 19th November 1928. Flint implements have been found in the Maryut district at Qasr el Qatāgi.

authority as Professor Moret of the College de France. On pages 86–87 of *Le Nil et la Civilisation Egyptienne* (Paris, 1926), he writes :

À l'Occident s'est produit un afflux de population libyenne. Ce qu'on appelle aujourd'hui le *désert* libyque, les anciens l'ont connu (tout au moins dans les parages du Delta) sous un aspect bien différent : terre sablonneuse, mais parsemée de pâturages, qui nourrissaient d'immenses troupeaux de bœufs, de moutons, d'ânes, pourvue d'une végétation arborescente, et riche en plantations d'oliviers. Là vivaient demi-nomades, demi-sédentaires, les *Tehenou*, chasseurs, bergers, caravaniers, armés de flèches et du boomerang.

But for us, who remain outside the somewhat jealous ring of Egyptologists, there are two accepted facts : firstly, that the land west of the Delta was known anciently as Tehenu ; and secondly, trees grew there—probably the olive, as the *wild* olive still grows in the Western and other deserts.

III

Mareotis at the Beginning of History

IT is possible that the people of the Tehenu were the descendants of the original semi-nomadic tribes who came to the Libyan desert, and who were driven by a changing climate towards the Delta and the coast. The hieroglyphic sign of the Tehenu was a throw-stick, or kind of boomerang, used by the herdsmen when hunting, and thrown at the legs of the gazelle, ostrich, or other wild animal, the game being thus knocked down for skinning and eating.

East of the land of Tehenu was the Kingdom of the Harpoon. Many years ago, Professor Newberry, in an article on " The Petty Kingdom of the Harpoon and Egypt's Earliest Mediterranean Port," [1] pointed out that the slate palette of Nar Mer in the Cairo Museum proved that about 3400 B.C. the north-west of Egypt (west of the Canopic Nile) was inhabited by a settled pre-dynastic people. Their country was known as the Kingdom of the Harpoon because

[1] Published in the *University of Liverpool Annals of Archæology and Anthropology*, vol. i. 1908.

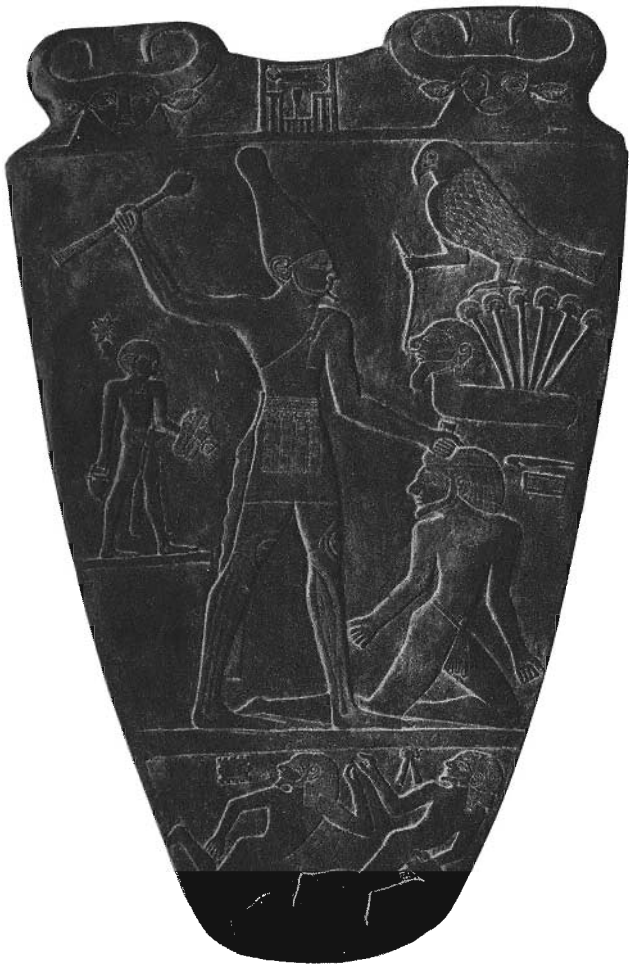
the harpoon was the hieroglyphic sign for this district, the cult object of the inhabitants, and their common weapon for killing fish in Lake Mareotis. The boundaries of the west and south of this kingdom are, I believe, unknown.

The earliest Mediterranean port on the Egyptian seaboard, about 3000 years before Alexandria was founded, was situated in the Harpoon Kingdom ; the actual site " cannot as yet be fixed with any certainty, but it is obvious that it must have been somewhere near the mouth of the river " (Newberry). Perhaps, however, the answer may be found in the great submerged port discovered and described by Monsieur Jondet.[1]

The celebrated slate palette shows Nar Mer (Menes) smiting (*i.e.* conquering) the King of the Harpoon, thus bringing the whole of Egypt under the dominion of the Pharaoh. Professor Newberry has written : " It was apparently one of the earliest and most important kingdoms of Egypt, for its ensign (the harpoon) occurs more frequently than that of any other petty state on the decorated pottery of the prehistoric times."

In his chapter on Menes in Mrs. Brunton's *The Great Ones of Ancient Egypt*, the same author has pointed out that the small ivory cylinder, found,

[1] G. Jondet, *Les Ports submergés de l'ancienne Île de Pharos* (Cairo, 1916) ; also " Les Ports antéhelleniques de la côte d'Alexandrie, et l'empire Crétois," by R. Weill (*Bull. de l'Institut français*, Tome xvi., Cairo, 1919).



THE SLATE PALETTE OF NARMER. (In Cairo Museum)

THIS ILLUSTRATES NARMER SMITING THE KING OF THE HARPOON. THE HIEROGLYPHIC SIGN (HARPOON AND LAKE) IS SEEN ABOVE THE KNEELING FIGURE

like the slate palette, by Quibell at Hieraconpolis, records the conquest of Tehenu-land by Menes. There is also the limestone mace-head of Nar Mer in the Ashmolean at Oxford, which Professor Newberry referred to in his address to the British Association in 1923.[1]

The inscription accompanying it records that he (Menes) had captured 120,000 prisoners, 400,000 oxen, and 1,422,000 goats. This immense number of oxen and goats is clear evidence that the north-western Delta and the region to the west of it (Tehenu-land) must have included within its boundaries very extensive grass-lands. Several centuries after Menes, Sahu-ra, a king of the Vth Dynasty, captured in Tehenu-land 123,440 oxen, 233,400 asses, 232,413 goats, and 243,688 sheep. Senusret I. also captured in the same region "cattle of all kinds without number." This again shows how fertile the country must have been at the beginning of the Middle Kingdom.

There are other records of captures of cattle in the Tehenu—by Khufu about 2690 B.C. (as depicted on the Palermo Stone), by Pepi II. about 2500 B.C. (as discovered recently by Monsieur Jéquier), and by Mentuhotep the Great about 2100 B.C. (see Breasted, *Ancient Records of Egypt*, vol. i. 423 H.).

In conclusion, I suggest that these facts, spread as they are over a period of thirteen centuries, prove beyond a doubt that what is now the Maryut

[1] P. E. Newberry, *Egypt as a Field for Anthropological Research*, Presidential Address to Section H. of the British Association, 1923.

desert and the north-west Delta was supporting a large population and large herds of cattle between the First and Eleventh Dynasties. The cultivation and pasturage must have been extensive and the rainfall more constant, while, perhaps, artificial irrigation was practised in places where it has now disappeared.[1] We know that Lake Mareotis was then a freshwater lake, higher in level and of greater area than at present.

The translation of early Egyptian records . . . compels the belief that the great Libyan desert to the west of the Nile valley was far less empty of life in the days of the Pharaohs than it has been for the last twenty centuries. Save for a narrow coastal rain-belt where a few Beduin reap a precarious barley crop, and for a few oases blessed with springs and wells, this vast eastern extension of the Sahara is now uninhabited and uninhabitable. Yet there was a time when its tribes, the Libyans of history, were numerous enough and sufficiently well organised to threaten mighty Egypt, even to give her rulers.[2] They did not know the camel, but they had flocks and herds, and they had obtained the horse from Egypt—sure proof that their country was no mere wilderness, though their migrations suggest it was becoming one. And when the scientific explorers of the inner recesses of the desert find flint implements, and rock drawings of oxen, giraffes, and elephants,

[1] Miss Caton-Thompson and Miss Gardner discovered a highly developed irrigation system east of Lake Qarun in 1927. These works, dating, it is true, from the second century B.C., covered 21 square miles of now waterless desert.

[2] See Chapter V.

in these "abodes of emptiness," the deduction is inevitable that the Sahara as we know it is a relatively modern geographical phenomenon, a final stage in a progressive deterioration from park-land to steppe and from steppe to desert.[1]

[1] See leader in *The Times*, dated June 19, 1934, entitled "The Conquering Sand."

IV

The Limits of the Maryut District

IT seems desirable at this point to indicate the limits of the Maryut district. In pre-history the western part of the Maryut was probably included in Tehenu, while the lands round the lake and the Canopic Nile belonged to the Harpoon Kingdom. In the First Dynasty both the Harpoon and the Tehenu were incorporated with Egypt, but the Tehenu was not always retained and was the scene of constant Libyan invasions and Egyptian counterstrokes. It was frequently the fortified borderland between Egypt and Libya.

Ancient Mareotis probably extended much farther east into the Beheira than at present. Even now one can trace where the Nitrian desert penetrated towards El Barnūgi, which was formerly Pernoudj or Mount Nitria.

In the XXVIIth Dynasty Maryut formed the petty kingdom of Marea or Mareotis, and the eastern boundary was on the Canopic Nile.

Mareotis was at times a nome of Lower Egypt, although it is not always to be found in the lists of

nomes or administrative districts. As a nome it was bounded on the east by Saïs, on the south by the Nitriote nome (Wadi el Natrun), and on the west by a frontier near longitude 29°. Even now this seems to be the boundary, as the Beduin living west of Alamein still speak of going to the Maryut when they travel eastwards from their own country, which they call El Maktūa, or the Isolated.

The capital of the Mareotic nome was usually the town of Marea, but at a later date it may have been Taposiris Magna.

West of the Maryut was the nome of Libya, Paraetonium, or Ammonia, the capital being the town of Paraetonium, which was corrupted by the Arabs into El Bartūn, Barek Marsa, and lastly to Marsa Matru. Farther westwards came Marmarika and Cyrenaica or Barka. As Dr. Bevan[1] says :

> The names and number of the nomes given us by Egyptian inscriptions and by Greek and Latin authors vary. Obviously there were differences of arrangement at different times ; a town might at one time be subordinate to the capital of a nome, at another time count as the capital itself, with a nome of its own.

There is considerable contradiction in the details of the geography and the positions of the towns as given by Ptolemy and Strabo, and, in a later chapter,

[1] E. Bevan, *A History of Egypt under the Ptolemaic Dynasty*, London, 1927.

I have attempted to identify some of the existing sites with the old names.

I think it may be worth while to try to give some details of the topography of Mareotis as it was in ancient times. First, the great freshwater lake with its long western arm which was separated from the sea by a narrow, well-cultivated spit of land about 60 kilometres long. This isthmus, now known as the Abu Sir ridge, was anciently called the Taenia of Taposiris, and it stretched from the Moon Gate of Alexandria on the east to where Lake Mareotis ended on the west. Along it was the only land road from Alexandria to the provinces of the west, so from the earliest times it was barred by fortifications dating from Ramses II. and including the frontier wall near Abu Sir, the square fortified place at El Bordān and the castle erected by the Sultan Baybars in the thirteenth century. The height of this ridge varies from 10 to 30 metres, and, according to Athenæus, it produced a good wine and was highly populated.

South of the western inlet of the lake is the Gebel Maryut ridge, not much higher than the Abu Sir ridge, on which there were several towns, including Marea. Behind it were the cultivated uplands rising gradually to 70 or more metres, and covered with *karums* or vineyards.

The eastern, or main, basin of Lake Mareotis extended in ancient times 40 kilometres south-east

of Alexandria, and the Maryut district lay along its southern and south-eastern borders.

In what is now the eastern part of the Maryut the *karums* are found 30 kilometres inland, and they mark the limit of cultivation in Græco-Roman times.

Farther south is the Nitrian desert, with its white sand ever moving among the last vestiges of plant life ; beyond is the escarpment and the dunes of sand blown out of the Qattara depression.

V

Mareotis as a Frontier Province and Independent Kingdom

ONE may surmise that the history of the Maryut, after the conquest of the Kingdom of the Harpoon and the Tehenu by Nar Mer about 3400 B.C., was somewhat as follows : The Harpoon country was probably early made a nome or administrative province of Lower Egypt, and its inhabitants settled down again to peaceful occupations. On the other hand, Egypt does not seem to have retained the Tehenu as part of the Kingdom.

The less fortunate people of this country were, as we have seen, often raided from Egypt for their herds, and, during the next two thousand years, they were gradually driven in from their pastures and olive groves by the encroaching sands and diminishing rainfall. No doubt the inhabitable parts of the Tehenu were contracting towards the east and the coastal belt.

In addition to these physical causes for the movement eastwards of the people of Tehenu and

Photograph by permission of the Visitors of the Ashmolean Museum, Oxford

THE MACE-HEAD OF NARMER
IN THE ASHMOLEAN MUSEUM

Libya, Mr. Oric Bates[1] has detailed for us some of the political reasons. About 1300 B.C. there was a great ethnic movement from the shores and islands of the Mediterranean which resulted in the arrival in what is now Tunisia of certain Mediterranean peoples armed with superior metal weapons. Here they brought pressure to bear on the existing weak Libyan people, who were still armed with stone weapons. This gradual usurpation resulted in wave after wave of Libyans moving eastwards and breaking against the bulwark of Egyptian civilisation. They were pressed from the rear and thwarted in their front until after, perhaps, five hundred years of persistent penetration the Libyans dominated Egypt.

So we read "the continuous infiltration of the Libyans into the Egyptian Delta assumed such menacing proportions" that Seti I. (1313–1292 B.C.) decided to attack them, and he defeated them in two pitched battles in the Delta, but failed to drive them far enough westwards, with the result that they were again sufficiently powerful to give trouble to his son, Ramses II. The Libyans were defeated by this great king, who, furthermore, "captured the countries of the West" and "settled the Tehenu on the heights, filling strongholds which he built."[2]

[1] See Oric Bates, "History of the Eastern Libyans," in *The Cairo Scientific Journal*, vol. vi. No. 71, 1912, and the same author's *The Eastern Libyans*, London, 1914.

[2] J. H. Breasted, *Ancient Records of Egypt*, 5 vols., Chicago, 1907, vol. iii. pp. 491 and 457.

These quotations from ancient inscriptions (from Tanis and Aswan) are very important. They may indicate to us the origin of the remains of the buildings erected by Ramses II. in the Maryut at Gharbaniyat and Karm Abu Girg. They certainly prove that Ramses II. occupied the Tehenu.

The waves of the Libyan movement eastwards continued. In the reign of Merneptah (1225–1215 B.C.), Meryey, King of the Libyans, with his allies, fell upon the people of Tehenu, who were now outside the Libyan federation. At Perire in the Western Delta (perhaps within the district of Mareotis), Merneptah met the invaders.

The Libyan vanguard halted, and for a whole day the straggling army of the invaders was massing for the attack. . . . It would seem that the invaders numbered from twenty to twenty-five thousand fighting men. It speaks well for the generalship of Merneptah that he held his soldiery in check and allowed the Libyans to form, rather than expend his strength in inconclusive skirmishes with advance bodies of the enemy. The two armies being assembled in face, the Egyptian infantry and chariotry advanced to the attack. When within range, the archers of Merneptah began to pour a heavy fire into the Libyan van, their bows being doubtless of a strength superior to those of the invaders. For six hours this fire was kept up until at length the Libyans were thrown into confusion and began to retreat. Meryey attempted vainly to rally his men : the retreat of the tribesmen became

a rout, and the victorious Egyptians pursued them with cavalry as they fled.[1]

The total slain was over nine thousand, including six sons of Meryey.

The effect of the rout is described graphically in one of the ancient records: "Their marchers-forward (*i.e.* the van) they left behind them, their feet made no stand but fled. Their archers threw down their bows, and the heart of their fleet ones was weary with marching. They loosed their water-skins and threw them to the ground." [2]

The pursuit was kept up as far as the "Mount of the Horns of the Earth," and in their flight Meryey and his men passed the Egyptian outpost called the Fortress of the West (perhaps Khashm el Eish, or Gharbaniyat), and the commandant of this place explained his failure to capture Meryey by saying "he passed by me by favour of night in safety."

There followed twenty years of peace in Tehenu and Egypt, but when Merneptah died there was a "period during which the power of the empire was weakened by obscure quarrels and the decay of the military spirit." This emboldened the Libyans under Thermer to attack Egypt once more. They advanced eastward through Mareotis to the Canopic Nile. Here they joined their sea-roving allies who

[1] Bates, *op. cit.* pp. 173–176.
[2] Breasted, *op. cit.* vol. iii. p. 609.

sailed up the Nile in company with the land force, sacking the Western Delta towns on their way. Suddenly Ramses III. burst upon the invaders like a thunderbolt, and completely defeated them, slaying twelve thousand, and even the pirates on the river suffered heavily, their ships being boarded by the Egyptians.

This was the first Libyan War of Ramses III. (1198–1167 B.C.), and it was followed six years later by the second, when the Meshwesh invaded the Tehenu. This is described on the first pylon at Medinet Habu as follows : " The chief of the Meshwesh went (with his forces) to one place and invaded Tehenu, who were made ashes ; spoiled and desolated were their cities, their seed was not." [1]

This proves that three thousand years ago the Tehenu contained crops and towns on the borderland of Egypt.

The Meshwesh were a powerful people from Barka, who, having defeated the Libyans, enlisted them as allies to invade Egypt. Their progress was stopped by the main Egyptian force arrayed near the fortress of Hatsho, which was situated by a canal called " The Waters of Re." Attacked by the Egyptians, and exposed to a galling fire from the fortress, the Meshwesh broke and fled, and were pursued " to the town of Usermare-Mereamon, which is upon the Mount of the Horns of the Earth." [2]

[1] Breasted, *op. cit.* vol. iv. p. 87. [2] Bates, *op. cit.* p. 181.

In spite of these defeats there was a steady and persistent infiltration of Libyan and Meshwesh immigrants into the Delta under the immediate successors of Ramses III., and by the end of the weak XXIst Dynasty (945 B.C.) this peaceful penetration reached its climax. The XXIInd, or Meshwesh, Dynasty was established as "rulers of what was still the most powerful empire in the Eastern Mediterranean."[1] They reigned over Egypt for two hundred years, and Libyan influence remained for some time after.

About the year 637 B.C. the Greeks appeared in Libya and founded Cyrene, and the Libyans of that country, feeling themselves oppressed by the invaders, sent messengers to Apries, Pharaoh of Egypt, asking for help. An Egyptian army was levied and dispatched through the Maryut to Cyrene. It was heavily defeated by the Greeks, and Apries (the Hopra of the Bible) was blamed, and it is of him that the Prophet Jeremiah speaks :

Thus saith the Lord : Behold, I will give Pharaoh-Hopra, King of Egypt, into the hand of his enemies, and into the hand of them that seek his life (Jer. xliv. 30).

Now the enemy of Hopra was Amasis, the general in command of the troops of the frontier of

[1] Botti wrote that the Meshwesh mercenaries were used to defend the country between Lake Mareotis and the sea (*i.e.* the Taenia), and probably they garrisoned the frontier wall erected against the Barbarians at Abu Sir after their defeat by Ramses III. When the Meshwesh became Pharaohs they made their capital at Bubastis (close to the modern Zagazig).

Egypt in the garrison town of Marea, and he led the revolt against the pharaoh and made himself co-regent. It is said the fighting which occurred in this revolt took place under the walls of Marea. Two years afterwards, in 569 B.C., Hopra was killed, and Amasis ruled over Egypt for forty-three years.

It was Amasis who encouraged the Greek merchants to enter Egypt, and assigned to them the city of Naukratis in the Western Delta. This place was situated on a canal close to the Canopic Nile—in fact, it is generally accepted that this canal or channel led from the Nile to Lake Mareotis. The Greeks speedily made Naukratis the most important commercial town in the Empire, and a friendly alliance was made between the Pharaoh Amasis and Polycrates the tyrant of Samos.

Amasis was followed by Psametik III., who was almost immediately defeated by the Persians under Cambyses at Pelusium, who occupied Egypt.

In spite of the failure of the Persian expedition sent from Kharga against the Temple of Ammon, in which fifty thousand men were lost for ever in the dunes, Cambyses left Mareotis alone, merely levying a tribute.

It was about this time that Mareotis (or Marea) became an independent kingdom. It included the whole of the north coast of Egypt from the Canopic Nile perhaps to the frontier of Cyrene. On the east its frontier marched with that of Saïs, at that time an independent State also.

Botti [1] gives the names of forty-eight towns in the kingdom of Mareotis, including those on the future sites of Canopus, Alexandria (Rakoti), Damanhur (Behdet), Schedia (then the customs station between Mareotis and Saïs), Taposiris, and Marea. He gives also the names of the kings of Mareotis in the fifth century B.C., including Khabissa, son of Psametic III. of Egypt, Psametik IV., Inaros, Thanyras, and Psametik V. It seems that Khabissa was the founder of this kingdom and petty dynasty about 525 B.C.

It appears that Mareotis enjoyed peace until about the year 455 B.C., when Inaros sailed from Marea with the intention of driving the Persians out of Egypt. This was in the reign of Artaxerxes I. Aided by the Greeks who sent their fleet from Cyprus, and with the assistance of the Greeks of Naukratis, Inaros defeated the Persians in a pitched battle in which he slew the Persian satrap, Achæmenes, with his own hand. He besieged Memphis, but was unsuccessful and was forced to retire. The Persians followed, and finally defeated him, near Prosopitis in the Delta, and crucified him.

Thus Mareotis has given at least one hero to Ancient Egyptian history. "According to the not uncommon Persian policy, his son Thanyras was installed in his stead." [2]

[1] Botti, *Revista Quindicinale*, Alexandria, 1891, pp. 420–483.
[2] Bates, *op. cit.* p. 189.

VI

Mareotis in Græco-Roman Times

AT the time of the arrival of Alexander the Great in 332 B.C., the country in the north-west Delta near the future city of Alexandria was, according to civilised Greek ideas, occupied by wild herdsmen. Quite probably civilisation had suffered a little and cultivation had been neglected after 400 B.C., when the independent kingdoms of Marea and Saïs broke up and the administration of these countries became disorganised.

During his celebrated pilgrimage from Egypt to the Temple of Jupiter Ammon at Siwa, Alexander is supposed to have found the country along the coast for the first two days' march westwards tolerable going through barren and parched country, but this may have been merely an exaggeration of the difficulties of the great man's march by writers who were not actually present.

When Alexander sailed down the Nile from Memphis, there is no reason why he did not continue in his boats into Lake Mareotis,[1] past the town of

[1] This conclusion is supported by Arrian, Bk. iii. 3.

Marea, to the landing-place at the western extremity of the lake ; and it was here, perhaps, that he was met by the envoys from Cyrene, near the frontier of Mareotis. The expedition suffered real desert conditions when it turned southwards from Paraetonium ; it was saved, according to Diodorus and Quintus Curtus, by a miraculous downpour of rain, and guided to Siwa by two crows (or serpents), when the guides fancied they were lost. A modern instance of a sudden downpour of rain in these parts, as late as April, is mentioned on page 308 of James Hamilton's *Wanderings in North Africa*, and as regards the crows, the reader is referred to page 69 of Bayle St. John's *Adventures in the Libyan Desert*, which is also quoted by Maspero and Bevan.

Alexander returned from Siwa by the road south of the escarpment through Moghara and the Nitrian desert, *i.e.* by the Masrab Mahashas.

No doubt with the building of Alexandria, about 330 B.C., the Maryut became settled again, and new towns, villages, and farms began to appear on the landscape. The extraordinary quantity of foundations all over the coastal area, and for 15 or 20 kilometres inland, prove how great was the development of the nome of Mareotis in Græco-Roman times when the vine and olive cultivation was at its height. Perhaps Macedonian soldier colonists settled here and tilled the soil with the help of the original inhabitants—the Libyan herdsmen and small culti-

vators of Mareotis. Greek civilisation could now spread through the whole of this country, westwards from Alexandria and eastwards from Cyrene. There was only one incident to disturb the peace in this period—when Megas, Viceroy of Cyrenaica, revolted and marched against Egypt. On reaching the town of Chimo in Mareotis he learned that the Marmaridæ had risen in Marmarika and threatened to cut him off from his base. He withdrew therefore to deal with them.

Later, when Cyrenaica came again under Ptolemaic rule, peace was guaranteed in Mareotis, and this was the golden age of prosperity which lasted nearly nine hundred years, with the land highly developed by a happy, peaceful people who were sufficiently far from the great city to be little affected by the political turmoils of the Ptolemies. Perhaps their only menace was the gradual diminution of the rainfall.

The seasons passed—the life-giving rains, the floral Springs, the vintage in Summer, and the sowing and planting of the Autumn.

It is an inspiring thought that Julius Cæsar and his legionaries once came marching through the Maryut, but so it happened two thousand years ago.

In the Alexandrine War of 48 B.C. we find Julius Cæsar hard pressed in Alexandria by a vastly superior Egyptian force ; Cleopatra was already his mistress. News was received that Roman reinforcements

from Syria, under Mithridates, had crossed the Nile at Memphis and were coming to Cæsar's help by the route on the west side of the Canopic branch, but an Egyptian army under the boy Ptolemy (Cleopatra's brother) was being dispatched from Alexandria in a fleet of lake craft to attack Mithridates. Masterful as always, Julius Cæsar, to meet this desperate situation, detached part of his small force, and placing himself in command, proceeded by forced marches round Lake Mareotis, probably by the causeway at Abu Sir, and so through the Maryut south-eastwards.

At the moment when the Egyptians had decided to give battle, Cæsar and his legionaries joined forces with Mithridates, and while the Alexandrians hesitated, he attacked them. Their position was on the river—the Canopic Nile, or the western channel leading from it to Lake Mareotis.

On the second day the position was taken, and a great part of the Alexandrine army—Gauls, Germans, Asiatics, Romans, Italians, beside Egyptian Greeks and natives—was put to the sword. When the massacre was over, the boy-king was nowhere to be found. It was reported that the boat in which he had tried to escape across the river had been overcrowded with fugitives, and had gone down.[1]

This triumph was followed not long after by the death of Cæsar, the advent of Antony, the battle of Actium, and the end of Greek rule in Egypt.

[1] Bevan, *History of Egypt under the Ptolemaic Dynasty*, London, 1927.

Strangely enough, little political or military information is to be gathered regarding the period of Roman rule in Mareotis, which lasted six hundred years from 30 B.C. The land remained cultivated and was regarded by Rome as an important grain-producing country. The earthquakes which did considerable damage in Alexandria in the fourth century, on four occasions in 312, 358, 365, and 396, probably caused some destruction in Mareotis also, especially in the great earthquake of A.D. 365.[1]

[1] See Captain H. Lyons' preliminary list of earthquakes recorded in Egypt in *The Cairo Scientific Journal*, vol. i. p. 177.

VII

Early Monastic Communities in Mareotis

IT was during Roman rule in Egypt that monasticism was first established, and, moreover, it took root at a very early stage in Mareotic soil. Before giving details of the earliest Christian monastic communities, I must mention the earlier Jewish settlement of the Therapeutæ, or Healers, which flourished in the first century.

Philo [1] describes them as a society widely spread throughout the world, with their headquarters on a hill overlooking Lake Mareotis and near the sea :

The ideal of the society (which included men and women) was to effect the cure of the soul from diseases, such as pleasures, lusts, pains, and fears, which afflict it in ordinary life.

The members of this society join it under the influence of a certain " heavenly passion," renouncing the world and forsaking both property and relations. They retire to gardens or solitary places outside towns and cities, and live in dwellings which are sufficient to give shelter, but are devoid of

[1] Philo Judæus, in *About the Contemplative Life*, also Sozomen, *Historia ecclesiastica*, quoted in White's *History of the Monasteries of Nitria and of Scetis*, New York, 1932.

luxury : in each dwelling there is a hallowed place " in which they practise in solitude the mysteries of the higher life." They pray at dawn and eve, and spend the rest of the day in studying the Scriptures, seeking for the ultimate meaning which underlies the superficial and literal sense. It is their custom to eat only after sunset, using bread, salt, and hyssop. As Philo expresses it, " they appease the mistresses which Nature has set over mankind, Hunger and Thirst, but do not pamper them." Some members of the society become so wrapt in contemplation that they forget to take food for as many as three or even six days.

During the six days of the week they live secluded " in the aforesaid monasteries " (*i.e.* alone), but on the seventh day they all meet together in a common Holy Place for a festival. This opens with a prayer, followed by a meal of which all partake, women being present. The president of the assembly then expounds some topic from the Scriptures on an allegorical basis (since it is an axiom of the society that the letter of the Scripture is to the spirit as the body is to the soul). Next, a hymn is sung and a table is brought in with " the most holy bread," symbolizing the bread on the holy table in the pronaos of the Jewish Temple at Jerusalem. Finally, ritual dancing takes place accompanied by choral song : at first men and women dance in separate groups, but afterwards all together ; this custom is in memory of the crossing of the Red Sea.[1]

Although this society of the Therapeutæ had no influence over St. Antony (born A.D. 251) when he founded the first Christian monastic community in the

[1] White, *op. cit.* p. 7.

Eastern Desert, yet there was some affinity between them. Cassian in his discussion of the beginnings of monasticism " strongly insists that the motive " of the earliest monks in seeking a desert life

was neither disgust with the world nor cowardly fear of dangers temporal or spiritual, but desire to lead a higher life. The dweller in the desert is not content with overcoming the devil in the world, but goes into the wilderness to wage open warfare with him. It is a fact ignored by many writers that for the Egyptian peasant the desert was not merely the desert, but the home of demons, or, as the modern fellah would say, of the *afarāt*.[1]

The late Mr. Evelyn White has been the first writer to destroy the old myth that the monasteries of Mount Nitria were in the Wadi el Natrun. The apparent equivalence of the ancient name for the Mount of Nitria to the modern name of Scetis (Wadi el Natrun),

and the somewhat close connection between these settlements in their early history, has not unnaturally led some ancient and most modern writers to identify the two, and has prevented even the more careful of the latter from clearly distinguishing them. Yet a mass of ancient evidence exists to show that the Mount of Nitria and the Wadi 'n Natrūn were the seats of entirely independent monastic colonies and were separated from one another by a considerable distance.[2]

After sifting the evidence, Mr. White came to

[1] White, *op. cit.* p. 14. [2] White, *op. cit.* p. 17.

the conclusion that the monastic settlement of the Mount of Nitria or Pernoudj was situated at and in the neighbourhood of the modern El Barnūgi, a village near Hosh Isa. In this he is supported by the ancient writers Palladius and Rufinus, and by the modern author of the critical edition of *The Lausiac History of Palladius*, the late Abbot Butler, who was a great authority on ancient monastic history.

Palladius [1] (*circa* A.D. 420) states clearly :

Between this mountain (of Nitria) and Alexandria lies a lake—that called Marea (Mareotis), seventy miles (*sic*) in extent. Having sailed across this in a day and a half, I came to the mountain in a southerly direction. Alongside this mountain (of Nitria) lies the sheer desert extending to Ethiopia, the Mazices, and Mauritania.

The actual distance in a straight line from Alexandria to El Barnūgi is 52 kilometres, but the sailing distance would be about 40 kilometres across the ancient lake and another 20 along the Naukratis canal. Palladius' distance is somewhat exaggerated, but the sailing-time would be correct in calm weather.

Rufinus (fourth century) makes the positive statement that the Mount of Nitria was 40 Roman miles (about 65 kilometres) from Alexandria.[2]

[1] *The Lausiac History of Palladius*, ed. Dom Cuthbert Butler, Cambridge University Press, 1898–1904.

[2] *Historia Monachorum*, chapter xxi. These figures rule out the possibility of Nitria ever being in the Wadi el Natrun, which is at least 70 Roman miles (over 100 kilometres) from Alexandria.

Abbot Butler, in reviewing the *History of the Monasteries of Nitria and of Scetis*, wrote :

A question that has been a puzzle to writers on Egyptian monachism, namely, the topography of Nitria and Scetis, has, I think, been laid to rest by the investigation here made. It has been taken as a matter of course that the Mount of Nitria is to be identified with the present Wadi n' Natrun : it is known that the Monastic Nitria got its name from the circumstance that nitre was collected there ; and nitre is in fact found in the Wadi n' Natrun. But ancient authorities prove that in Roman times nitre was found also and worked in large quantities in the Delta ; so Strabo, who places the Nitriote nome in the Delta. The statements of Palladius, Cassian, and others, who actually made the journey, show that the Mount of Nitria, where was the monastic settlement, was not nearly so far from Alexandria as is the Wadi n' Natrun ; and a number of indications seem to justify the location of Mount Nitria at a spot on the confines of the Delta, beyond the Nile, in the desert, some 40 miles S.E. of Alexandria, at one of the places where nitre used to be found.[1] . . . But the monastic Nitria being removed from the Wadi n' Natrun, it becomes possible to place there with confidence the monastic settlement of Scetis ; and this solves a whole number of difficulties in the statements of the early writers, arising from the mistaken identification of Nitria with the Wadi n' Natrun.[2]

Actually the modern El Barnūgi is situated on fairly flat land, but alongside it is Tell el Barnūgi el

[1] Nitre is still found in the ponds and lakes round El Barnūgi.

[2] Abbot Butler, O.S.B., D.Litt., in *The Downside Review*, vol. li. No. 145, Jan. 1933.

Qibli, which hill rises over 6 metres above the surrounding land, much of which is at sea-level. No doubt the monastic settlement was situated here, surrounded by the natron lakes, Mallahet el Tarrana and Tarranet Harara, etc.

Mr. White seems to think that some of the monasteries attached to the Mount of Nitria, or Pernoudj, were in the neighbouring *gebel*, "mountain," or desert, but I do not think he has proved this conclusively except so far as Cellia is concerned. He has proved that Cellia was 16 or 19 kilometres W.S.W. of El Barnūgi.

The 1 : 100,000 Survey Sheet No. 88/54 shows how near the desert still is to El Barnūgi or Mount Nitria, and how close the ancient Lake Mareotis must have been. The zero contour line of the lake is only a few kilometres to the north-west. There were probably two ancient canals or channels near El Barnūgi—the canal from the Canopic Nile near Naukratis to Mareotis, and the ancient channel, more or less in the bed of the El Hagir-Awiri, which ran from the Faiyum into Lake Mareotis and was probably the Lycus River of the ancients.

The founder of the monastery of the Mount of Nitria was Amoun (275–337 ?), who had retired there from the world. Beginning as a solitary, his reputation for holiness spread, and there collected in his neighbourhood many admiring imitators. Soon he found himself, like St. Antony, called on to

assume the directorship of a community which had grown up round him. This was early in the fourth century, very soon after the foundation of the community of St. Antony in the Eastern Desert.

We may infer that Antony exercised a strong moulding influence over the nascent community. Fortunately a definite instance of this is on record : " Abba Antonius once came to the Mount of Nitria to visit Abba Amoun ; and after they were met together Abba Amoun said to him : Since through your prayers the brethren are multiplied, and some of them wish to build cells afar off in order that they may be at peace ; at what distance from those which are here (Pernoudj) do you advise that the cells should be built ? Antony answered : Let us take food at the ninth hour and then go forth and pass through the desert and consider the place. And when they had journeyed through the desert until the sun began to go down, Abba Antonius said to him : Let us pray, and raise up the Cross in this place, that those who wish to do so may build here, and that the monks who come thence, when they visit the monks here, may eat their little morsel at the ninth hour, and so visit them ; and they who set out from here may do likewise and so remain undistracted while they visit one another. Now the distance is twelve miles." [1] The settlement thus founded is undoubtedly Cellia—which owed its origin therefore to both Amoun and Antony. This passage is important, not merely as showing how greatly the community at the Mount of Nitria had grown even in Amoun's lifetime, but as witnessing to Antony's direct interest in the new monastic

[1] *Apophthegmata Patrum*, xxxiv., quoted by White.

center and to the authority which (it is implied) Amoun exercised over the monks, who could not found a new colony without Amoun's consent. How far Amoun's authority extended we cannot say ; but it is noteworthy that a monk, sent by his " father " from Scetis, appealed to Amoun for advice—as though Scetis also in its early days acknowledged the sovereignty of the great settlement at the Mount of Nitria.[1]

I do not think it is desirable that I should quote much more from Evelyn White's great work ; I would merely add that the first of the Wadi el Natrun (Scetis) monasteries was founded about 330, some years after the Mount of Nitria (Pernoudj) establishment, and it is probable that the first monks were drawn from the latter house.

A number of celebrated persons visited the Mount of Nitria and Cellia monasteries—St. Jerome, Rufinus, Melania, Paula—and several celebrated men lived as monks there—Palladius, Evagrius, Pambo, Isaac, and Macarius of Alexandria.

In a general work such as this it is impossible to describe all the religious controversies and persecutions, but Nitria appears to have been strictly orthodox and to have entertained St. Athanasius.

Although there was persecution of the Nitrian monks in the reign of Valens, yet the well-known story about the rounding up of the monks in Mareotis for military service is probably a myth, but many

[1] White, *op. cit.* pp. 49–50.

were exiled to Palestine. At this time (A.D. 373) the number of monks was probably three thousand, and by 390, when the persecutions were over, the number had risen to five thousand, and the monasteries of the Mount of Nitria and Cellia emerged from this period with an enhanced reputation for orthodoxy and steadfastness.

The author of *Historia Monachorum* describes the Mount of Nitria at the end of the fourth century as the most famous monastic centre in Egypt, situated nearly 40 miles from Alexandria, and taking its name from the village nearby, where natron was collected. Here were fifty cells lying close together, in which the monks dwelt singly and in larger or smaller groups, under the supreme authority of one father or superior.

The monastic buildings at Mount Nitria were probably of the simplest. The church is described by Palladius as a great one, but not as magnificent; it may have been quite rude in construction, the work of the monks themselves. Excavations would lay bare what remains of the once extensive buildings at El Barnugi.

Cellia was founded originally as an annexe of Mount Nitria for those monks who wished to live a quieter and more solitary life, but it tended to become more important than the parent settlement, which towards the close of the fourth century was sinking into the position of a training college for

aspirants of the " higher life " of solitude. We are told that the cells were scattered in the desert and apart. The monks met only in church, and their food was sent out from Nitria, 10 or 12 (Roman) miles away. Their spare time was devoted to basket or mat making, etc. :

In the Byzantine period (fifth century), we hear little of Cellia and less of the Mount of Nitria. This can only mean that the two centers had fallen from their old supremacy, superseded by younger rivals. Those monks who desired to live in the utter desert now retired to Scetis, while the less hardy and more worldly settled in the numerous monasteries near Alexandria [Pempton, Enaton, and Oktokaidekaton] at the fifth, ninth, and eighteenth milestones on the road from Alexandria to Cyrene.[1]

By the beginning of the eighth century Nitria and Cellia were probably in ruin, and they have disappeared completely in the last twelve hundred years, while some of the monasteries of Scetis in the Wadi el Natrun have remained to this day, although their former glories have departed.

[1] White, *op. cit.* p. 257.

QASR EL QATAGI
THE LONELY CHAPEL OF THE DESERT

Photo : Dr. Maurer

VIII

The End of the Roman Dominion and the Arab Conquest

THE reforms of Justinian penetrated even to the Maryut, but this was the last civilising force to affect the land, and from A.D. 600 it gradually declined from prosperous cultivation to neglected desert. Furthermore, the movement which ended the Roman Empire began at Pentapolis in Cyrenaica, to the west of the nomes of Mareotis and Paraetonium.

Heraclius, Prefect of Africa, planned the insurrection against the government of Phocas. An army under the general Nicetas was dispatched by land along the coast road and the Taenia to attack Alexandria—the second city of the Empire—and to conquer Egypt. There was practically no fighting on Maryut territory, for Leontius, Prefect of Mareotis, had been won over, and had promised a considerable body of troops.[1] Dr. Butler has given us the following valuable description of the country as it was at that time (A.D. 609) :

[1] A. J. Butler, *The Arab Conquest of Egypt and the Last Thirty Years of the Roman Dominion*, Oxford, 1902. He quotes largely from the Chronicle of John of Nikiou.

It is thought that nowadays such a march would lie almost entirely through a waterless desert ; but there is abundant evidence to show that in the seventh century of our era there were many flourishing towns, palm groves, and fertile tracts of country, where now little is known or imagined to be but a waste of rocks and burning sands. The subject is one of some interest to scholars and to explorers, and some brief remarks upon it may be pardoned. From Ptolemy we know that the province of Cyrene ceased on the eastern side at a city called Darnis, where the province of Marmarica began. Moving eastward, Nicetas must have passed, among other places, the city of Axilis, the towns of Paluvius, Batrachus, and Antipyrgus, and the promontory of Catæonium, all in the nome of Marmarica. The nome of Libya began near Panormus, and included among other towns Catabathmus, Selinus, and Paraetonium, or Ammonia as it was called according to Strabo. Paraetonium was the capital and the seat of government of the Prefect : the name seems to have lingered in the Arabic Al Bartūn. Still further east in the same nome we come to Hermea, then to Leucaspis ; and half-way between Leucaspis and Chimovicus began the nome of Mareotis, in which the best-known towns were Plinthine in Taenia, Taposiris Magna, the fortress of Chersonesus, and the city of Marea or Mareotis.

Both Ptolemy and Strabo give many other names, and it is certain that in the first century Egyptian territory was regarded as ending where Cyrenaic began, and that there was no break of impassable country between them. Later the nome of Libya suffered some decay, and in the sixth century Justinian compensated the Prefect for the poverty of his province by throwing the nome of

Mareotis in with his government. But even then the way from Pentapolis to Alexandria was in well-defined stages, with no serious gaps or breaks : nor had the continuous character of the route changed at the time of which I am writing. This is proved beyond doubt. . . .

Indeed nothing could be more false than to picture the route as lying across inhospitable deserts. . . .

It is, then, clear that before the Arab conquest there was a continuous chain of towns, and an almost unbroken tract of cultivated land, stretching from Alexandria to Cyrene, and that the march of Nicetas demanded no great qualities of generalship or endurance.

Nicetas entered the neighbourhood of Alexandria from the Taenia and took the town of Kabsain, which Butler suggests may have been Chersonesus, but found his passage barred at the western environ of the city, and in the ensuing battle he was victorious and occupied Alexandria and held it for Heraclius. Later on, Bonōsus, the savage general of the Emperor Phocas, attacked Nicetas in Alexandria, but once again the Imperial cause suffered severe defeat. Bonōsus managed to escape with difficulty to Nikiou, where he reorganised his remaining forces.

But not being strong enough to confront Nicetas again, he passed down another waterway (probably that called Ar Rūgāshāt) towards Mareotis, and entered the Dragon Canal on the west of Alexandria with the intention of seizing Mareotis as a fresh base of operations against the capital. But Nicetas

received intelligence of his plan, and defeated it by sending to break down the bridge at a place called Dafashīr, near Mareotis, and so blocking the canal.

This passage from Butler is unintelligible in view of the present supposed position of the Dragon Canal as shown on the maps of Botti, Baedeker, etc. All these maps show this canal meandering aimlessly in and out of the western walls of Alexandria, and Butler's map is entirely incorrect. By entering the Dragon Canal (of Botti) from the south Bonōsus could not possibly have seized Mareotis ! It seems that Botti, Butler, and Baedeker have relied solely on Zotenberg's reading of John of Nikiou's *Chronique*.[1] Amélineau, in his great work *La Géographie de l'Égypte dans l'Époque Copte* (Paris, 1893), disagreed with Zotenberg's identification of Dafashīr with Taposiris, as well he might, as no bridge, even on the causeway at Taposiris, would block the way from Nikiou to Mareotis by way of the Dragon or any other canal. Unfortunately even Amélineau, in trying to fix an approximate position for Dafashīr, becomes vague.

John of Nikiou states expressly that Dafashīr was near the Church of St. Menas and the town of Mareotis, so by drawing an imaginary base line between these two places and producing a triangle eastwards, we find, in my opinion, the approximate position of Dafashīr at the apex of the triangle. I

[1] Translated by Zotenberg and published in Paris in 1883.

suggest that the Dragon Canal ran into Lake Mareotis about 20 or 25 kilometres south of Alexandria, and in sailing from the debouchure over the lake, one would, no doubt, approach the city from the west, and this agrees with Bishop John's statement that the canal was on the west of the city. Further, I suggest that the Dragon Canal was the winding end of one of the channels which ran from the Nile to the lake, and followed roughly the course of the present El Hagīr canal and the bed of the ancient channel now called El Awiri, which winds about in the neighbourhood of the village of Ghayata. The Pi Drakon was thus named on account of its windings being like a dragon's tail. Near the mouth of this canal was Dafashīr with its church and the stone bridge of St. Peter the Apostle which quite possibly carried the important roads from Mareotis and Abu Menas to Turūga, Hermopolis Parva, and Naukratis.

And so it was that Nicetas, hearing that Bonōsus was setting out by water in Paul's flotilla, sent people to destroy this bridge, and thereby not only blocked the canal but also this waterway to Alexandria. Bonōsus was furious at this check, and massacred the inhabitants of Dafashīr :

Nicetas was hurrying to meet him : but Bonōsus knew the folly of risking a battle with the diminished remnant of his force. He therefore retreated, crossed the Nile, and once more gained the shelter of Nikiou. Instead of passing the river to pursue him Nicetas

remained on the western side, and occupied the town and province of Mareotis with a considerable army.

Having secured his rear and his communications with Cyrene, he compelled Bonōsus to retire and join his master at Constantinople, leaving Heraclius in full possession of Egypt.

As Dafashīr played such an important part in this campaign, I suggest that it would be worth while to search for its site near the tail of the Nubariya canal and between Kom el Riyāshāt and Kom Bilal. I am afraid Herr Falls' attempt to identify the site of one of the many churches of the Maryut (near Bahig) as that of Dafashīr, cannot be taken seriously.[1]

Butler tells us that when the Copts were persecuted by Cyrus, the Roman Patriarch, the people met in the church at Dafashīr and hatched a plot to kill the oppressor :

But a Roman officer named Endocianus, brother of Domentianus and one of the most relentless enemies of the Copts, heard of the meeting and sent soldiers with instant instructions to shoot down the conspirators. Some were killed outright, others wounded by the arrows, and others again had their hands cut off without the semblance of trial. So the conspiracy was crushed, and Cyrus was delivered from danger (A.D. 631–641).

In the short period between 619 and 626, during which Egypt was invaded by the Persians under

[1] See p. 107 of Kaufmann's *La Découverte des Sanctuaires de Ménas*, Alexandria, 1908.

Khusrau and expelled by Heraclius, the towns and villages of Mareotis saw again a foreign army passing through its fields and vineyards. The Persian army was marching

to the conquest of Pentapolis, and returned after a successful campaign, in which, according to Gibbon, were finally exterminated the Greek colonies of Cyrene. This, be it remembered, was only eight or nine years after the march of Nicetas. But Gibbon is altogether mistaken in his view of the devastation wrought by Chosroes' troops in that region—great as it was, but in no way fatal or final. On the contrary, less than thirty years later, when Amr Ibn al Asi the Saracen captured Alexandria, his thoughts turned naturally to Pentapolis, and to Pentapolis he went, conquering Barca and Cyrene. There is no record or hint of either march being regarded as a great military achievement or triumph over natural difficulties.[1]

Alexandria was captured by Amr in 642, and it was in this year that he marched through Mareotis to Pentapolis, returning victorious with a long train of captives and with abundance of spoil. There was a second expedition later in which the advanced party was under the command of Uqba-ibn-Nafi, who destroyed Chimo (El Bordān) in the Maryut on the way.[2]

Mr. Oric Bates thus summarised the result of the Arab conquest of the Western Desert :

[1] Butler, *Arab Conquest.*

[2] I think the details will be found in M. Caudel's *Les premières Invasions Arabes dans l'Afrique du Nord*, Paris, 1900.

> The ancient inhabitants of the country, Libyans or Berbers, tended to become more and more Semeticised, both in speech and in blood. . . . The Arab pressure from the East tended for centuries to push the Berbers of Eastern Libya toward the west, and toward the southern desert.[1]

In the foregoing chapters I have endeavoured to record the various military operations and scraps of history which affected in some way Mareotis. This book is no history of the district, but consists merely of notes in chronological order of the various happenings which had any connection with it.

In this last chapter I have quoted largely from Dr. Butler's *Arab Conquest*, because he is the only modern writer I have come across who paints us a picture of the Maryut and the Libyan coast country as it was. The discovery and translation of John of Nikiou's Chronicle was a most valuable contribution to the history of the fall of the Roman Empire, and it was unknown to Gibbon. Some day, perhaps, some other informing manuscript will be discovered, or some excavation will lay bare further facts about the district. At present we have practically no knowledge of the local history of Mareotis.

[1] " History of the Eastern Libyans," in the *Cairo Scientific Journal*, vol. vi., 1912.

IX

The Decay of Mareotis

Sunk are thy bowers, in shapeless ruin all,
And the long grass o'ertops the mouldering wall ;
And, trembling, shrinking from the spoiler's hand,
Far, far away, thy children leave the land.
(*The Deserted Village.*)

ALREADY in the sixth century the whole country had suffered from the terrific scourge of plague and earthquake, which must have destroyed many people and buildings in the Maryut.

We have seen that in the early part of the seventh century there were three invasions of the country within thirty-four years—that of Nicetas in A.D. 609, of Khusrau about 619, and of Amr Ibn el Asi in 643. These must have unsettled the Maryut, although Dr. Butler probably writes with reason that " there is express evidence that practically the whole of the coast provinces west of Egypt continued well populated and well cultivated for some three centuries after they fell under Arab dominion."

But still, during those three centuries the decline must have set in, for with the Arabs came the wild Beduin and the disappearance of the Roman master

farmers. The land must have suffered progressively with increase of the lawlessness of the Beduin, farms and villages would have become deserted, and wells and cisterns neglected, as security was less and less guaranteed.

During the Abbaside rule, the first Fatimid Khalif Ubaydalla el Mahdi was gaining power in Qairawān, and his influence was felt from Fez to the frontiers of Egypt. Three marauding expeditions were sent into Egyptian territory in A.D. 913, 914, and 918, and these so harried the people of the Maryut that they withdrew to Alexandria. But even Alexandria itself was not safe, as a few years afterwards it was taken by Abu'l Qasim, the Mahdi's son. He was driven out, however, by the brother of the Ikhshid ruler, and sustained a crushing defeat during his retreat, probably somewhere in the Maryut.

Then followed the final invasion of Egypt by the Khalif al Mu-izz, who with his general, Gōhar, spent two years in the most careful preparations, digging wells and building rest-camps on the road to Egypt.

As a result of internal disorders, famine caused by a low Nile, and plague, Egypt lay helpless and open to an invader, and its precarious position was fully reported to al Mu-izz by the refugee Yāqūb-ibn-Killis, a renegade Jew and former favourite of Kāfūr. The Arab tribes were accordingly summoned, and Gōhar at the head of a hundred thousand

men, with ample stores and equipment on pack animals, marched from Qairawān. . . .[1]

This wonderful march, of at least 1500 miles from Tunis, took exactly five months to accomplish, part of which would have been through the Maryut, and it terminated at Giza on 6th July 969, Fūstat being taken and Cairo founded the same day.

Meanwhile the district of Mareotis west of Taposiris and Abu Menas was probably permanently abandoned already. The church of St. Menas was still standing, however, as late as the twelfth century, but the pilgrim town round it was in ruins, and the Beduin were using these ruins as lurking-places to lie in wait to plunder travellers. Incidentally, they were playing the same game seven hundred years later when Mohamed Ali Pasha destroyed some of the few remaining buildings in the desert to put an end to it.

The marauders from the west continued to harry the Maryut, and as late as the thirteenth century the Sultan Baybars built a strong castle at El Imayid probably to counter these raids.

Maqrizi has left us this description of Mareotis at the end of the fourteenth century :

Mareotis was a district dependent on Alexandria. At one time houses and gardens were dotted over the whole country westward up to the very frontiers

[1] K. A. C. Creswell, " The Foundation of Cairo," in the *Bulletin of the Faculty of Arts*, vol. i. Part ii., Cairo, 1933.

of Barka. To-day Mareotis is only a town in the canton of Alexandria, and is used by that city as a market for the abundant produce of its fruit gardens. There is a mosque which was built in 666 A.H., and the revenues of the town were bequeathed to the mosque of al Hākim (in Cairo) by the Sultan Baybars for pious uses; but Sheikh Mahmūdi, having bought it in 821 A.H., had the gardens re-made after their destruction by the incursion of the Lebid Arabs who inhabit the territories of Barka.

Thus, in the fifteenth century, we hear once again of a raid on Mareotis, and for the last time we hear of any reconstructive work in the district. Mareotis, the last town in the Maryut to stand against the forces of destruction, was no longer the head-quarters of ordered government as in Græco-Roman times; it was administered from Alexandria.

Other causes which contributed to the decay were further earthquakes, and, more important still, the silting up of the Canopic Nile in the twelfth century which cut off the freshwater supply from the Mallāhet Maryut, or western arm of Lake Mareotis, and diminished cultivation in the district bordering the lake in general. But undoubtedly the final blow to civilisation in the Maryut came in the sixteenth century when, under Turkish dominion, Alexandria sank to a sad little city of perhaps ten thousand inhabitants, and the dependent town of Mareotis fell into ruins, and practically all cultivation ceased in the district.

QASSABAT EL GHARBIYA

Photo : Dr. Maurer

Thus did neglectful government and Beduin lawlessness replace the patient planning and planting of the thousand years of Græco-Roman civilisation. The wind, rain, and sand of continuous seasons completed the destruction, leaving only the foundations of countless buildings to tell the tale of this once prosperous land.

X

The Ancient Industries and Population

In the prosperous Græco-Roman period, besides vines, olives, and grain, there is no doubt figs, dates, almonds, and other fruit trees were cultivated in the Maryut. Papyrus of a fine quality grew near the margin of the lake and round the eight islands which studded its waters, and Dr. Butler tells us that enormous quantities of papyrus were exported from Alexandria. Another industry would have been the lake and sea fishing, and, although the little sea harbours have long since silted with sand, even to-day one sees sometimes a fishing boat from Alexandria carrying as many as a dozen men working close into the shore, and anchoring at Derasiya either for shelter or to rest the crew. In ancient times there were harbours at Chimo, Leucaspis, Derrhis, Zephirum, and perhaps at Plinthine. The freshwater-lake fishing and fowling has been recorded for us on the walls of the tombs of Saqqara and elsewhere. Glass-making was actually invented in this region in very early times, and, according to Professor Newberry, the materials for the manu-

facture of glass were exported from the Nitrian desert to the famous factories at Murano, as late as the eighteenth century. Butler says that the glass-works of Alexandria and of the Nitrian desert were long famous. There are traces of glass-works at Marea and Taposiris and elsewhere.

As regards the more local industries, the extraction of the gypsum in the Wadi el Gyps, and plaster-making, no doubt figured largely, also the collection of the nitre round about Barnūgi (Mount of Nitria). But perhaps the most important section of the population were the masons, in view of the very numerous buildings, the cisterns, wells, catacombs, and the general upkeep and repairs they entailed. The quarrymen must have been constantly at work in the numerous quarries one sees all along the limestone ridges of Abu Sir and Gebel Maryut, and the method employed in cutting off great blocks of stone seems to have been extraordinarily advanced. To this day one can see the saw-marks indicating titanic quarrying operations. Lastly there was the enormous industry of the potters, and one has only to consider the tons and tons of potsherds to realise the immense importance of this industry ; it included the making of all kinds of domestic utensils and the long pointed amphoræ for storing the wine and the oil of the country.

One can picture this land in the height of its prosperity—the olive plantations and the vineyards,

the villages of white houses, the numerous comfortable farms—the little churches in the Christian period—all against the blue sky; and by the turquoise sea, little coast towns, with the sails of the fishing boats, and the nets drying on the shore. Round the lake the low vine-covered hills, the towns, farms, and villas. I think Socrates epitomised all this when he wrote: "Mareotis is a district of Alexandria containing very many villages, and an abundant population, with numerous splendid churches." [1]

I have endeavoured to show that the population of the Maryut in prehistoric times was considerable; to-day the population of the *whole* of the Western Desert, including Bahariya and Siwa oases, Matruh and Salum, is reduced to only fifty thousand; but, judging from the evidence of the immense number of foundations of towns, villages, and farms, the population of the Maryut alone, in Græco-Roman times, must have been many times greater than now. Taking one section of the population only, we know that there were no less than five thousand monks in the Nitria-Cellia monasteries in the fourth century.

In the Maryut we find traces of habitations many miles inland, and near the coast there were considerable towns, which in modern Egypt would hold a population of several thousand souls. Then the population would have consisted of Greek or Roman

[1] Socrates, Bk. i. p. 27.

farmers ; the humble farm labourers and the herdsmen of the country ; the State prisoners working in the quarries, making the *karums*, roads, jetties, and other public works ; the fishermen, potters, masons, and the rest. And at the headquarters of the nome would be the Prefect and the various subordinate officials, and the frontier garrison or other troops.

Before closing this chapter I must refer in some detail to the wine of the country. The region round Mareotis was renowned for its vines. Virgil (*Georg.* ii. 91) describes the Mareotic grapes as being white and growing in rich soil ; Strabo (xvii. 799) states that the wine matured by keeping ; and Horace (*Odes*, i. 37) hints that it was the favourite beverage of Cleopatra.

In this connection Dr. Bevan says :

One must also bear in mind that continuous carousals with Antony and his boon companions may well in the long-run have blunted her acumen and diminished her power of restraint. Horace may have been going by first-hand information when he described Cleopatra's mind in these days as " disordered by Mareotic wine." This Levantine woman of thirty-seven, whose life had been one of riotous indulgence, must have been something altogether grosser, less pleasant to contemplate, than the fascinating girl of twenty-one who had made a conquest of the great Julius.

> Give me my robe, put on my crown ; I have
> Immortal longings in me ; now no more
> The juice of Egypt's grape shall moist this lip.
>
> (*Antony and Cleopatra*, v. 2.)

I am indebted to Judge Blake-Reed for the following translation of a passage from Athenæus of Naukratis (*circa* A.D. 230). In discussing various wines this author says :

The Mareotic wine, which comes from Alexandria, takes its name from the Spring of Marea at Alexandria and the city thereon of the same name, which was formerly very great but now has shrunk to the size of a village. The place took its name from Maro, one of the sharers in the campaign of Dionysus. Vines are plentiful in this country. The grapes are very palatable for eating, and the wine made from them is very fine. It is white and sweet, has a good *bouquet*, is digestible and light, does not affect the head, and is diuretic. But a better wine than this is the kind called Taeniotic. Taenia lies in the same regions. Its wines are a rather pale yellow with something of an oily quality, which is soon dispelled by mixing with water, as is the case with Attic honey when it is diluted. The Taeniotic wine, in addition to being sweet, is somewhat spicy and lightly astringent (*Athenæus*, i. 33).

Finally, Athenæus tells us that the best wine came from Antylla, near Alexandria, and that the excise duties collected on wines were conferred by the ancient kings on their wives as pin-money.

Judge Blake-Reed has pointed out that the etymology of the name Marea is false, and this is borne out by Botti, who gives the derivation of Mareotis as Pa-mar or Pi-mari-t. It was known also as Sa-Amen, the vineyard of the god Ammon.[1]

[1] See *Bulletin de la Soc. Archéo. d'Alexandrie*, No. 4, 1902. See also Appendix C at the end of this book.

Besides wine, the Maryut produced beer, brewed from the barley, which was popular with the poorer people.

Wine-making and grape-growing in Mareotis, and elsewhere in Egypt, must have received its death-blow when Mohammedan rule was firmly established after the Arab conquest.

XI

Lake Mareotis in Ancient Times

AS the Maryut district takes its name from Lake Mareotis, I will attempt to describe the lake as it was—a deepish freshwater lake, rather than the shallow, weedy sheet of water, mud flat, and mirage it is now.

From early times until the twelfth century some of the waters of the Nile entered the lake through several channels. Ships sailing from Memphis came down the Nile and through one of these channels into Mareotis, and discharged or loaded their cargoes at the Portus Mareotis on the south side of Alexandria, from whence merchandise destined for export overseas was transhipped across the city to the maritime harbours on the north side.

Strabo in his *Geography* (xvii. 7–22) says that the imports of the lake port of Alexandria were greater than those of the maritime port, although the latter exported more. This seems a very reasonable statement because, probably, much of the export trade of Egypt, except that sent through Pelusium

and a few minor ports, arrived by way of Lake Mareotis and Alexandria.[1]

Alexandria, on her foundation, superseded the ancient Egyptian port of " the Great Door " near the mouth of the Canopic Nile to which I have referred in the third chapter.

There seems to be little doubt that two thousand years ago the lake was of greater extent than in modern times, and, in addition, the long Abu Sir inlet ran westwards towards El Imayid. Ships could sail from the Portus Mareotis of Alexandria to the numerous towns and villages, the jetties and quays of which can still be traced in the western inlet and on the islands. The fine jetties at Mareotis are a striking example, and they prove that the average depth of water in Græco-Roman times was considerable. We know that, in addition to vessels of commerce, the Ptolemies were able to maintain a fleet of lake war-vessels and transports based on an arsenal at Portus Mareotis, and this is another proof of the importance of the lake in ancient times.

Strabo gives a charming description of Lake Mareotis in its peaceful days. He tells of the agreeable sight presented by the papyrus and bean plantations on the borders of the lake, the stalks of the water-bean being 10 feet high with great cup-

[1] It should not be forgotten that Alexandria was in direct water communication with the Red Sea by way of Mareotis, the Nile, and the canal of Darius.

shaped leaves. It was the custom of the people of Alexandria to spend their holidays on the lake, sailing in boats provided with cabins, and they would sail in under the shade of the great bean leaves and make merry. Near Abu Sir, close to the sea, was a rocky spot which was the resort of great numbers of people at all seasons of the year for the purpose of recreation on holidays, so Strabo tells us.

Good Mareotic wine and beer could be obtained at the towns on the lake—at Nicium, Mareotis, Plinthine, Taposiris, and at the little inns on the islands where, perhaps, there were benches under the vine trellises. There the gay boating parties would put in for refreshment.[1]

On such feast-days one can picture the western arm of Mareotis, between the low hills, lit up with white sails by day and the reflections of lamps by night; while, as the boats returned towards Alexandria in the evening, one heard, carried across the dark waters, the sound of voices singing.

. . . . . .

But besides being used by the pleasure-seeking public, Lake Mareotis was, as already indicated, an important means of communication for water-borne traffic to and from the interior of Egypt. The food-stuffs of Thebaid, the gold, porphyry, and other minerals of the eastern desert, and the wine,

[1] Compare with Botti, on page 79 of the *Bulletin de la Société Archéologique d'Alexandrie*, No. 4, 1902.

TEMPLE OF OSIRIS AT ABU SIR or TAPOSIRIS MAGNA

Photo : Dr. H. Maurer

oil, and cattle of the Maryut were carried in boats to the lake port of Alexandria.

At the time of the festivals at the great Temple of Osiris, large numbers of pilgrims must have travelled by water to Taposiris, and, after A.D. 325, pilgrimages would have been made, part of the way by boat across the lake, to the Christian shrines at Mount Nitria, Scetis, and St. Menas.[1]

It seems highly probable that from early times travellers to Libya or Cyrenaica from Alexandria, or from any town in Egypt, went by water as far as Taposiris, which with the merchandise carried to and from this place, accounts for the great size of the lake harbour and the length of the jetties at Abu Sir. Even now in its silted state this harbour lies over 1 metre below the sea, and the jetties of the other extensive lake port (Mareotis) also stand below sea-level. Judging from the height of these quays and jetties the level of the ancient lake must have been fairly constant for a long period, perhaps about sea-level.[2]

The ancient Lake Mareotis, like Lake Moeris, was a basin into which some of the waters of the Nile found their way, and the level of both fell gradually in historical times. In both cases this was due to the silting of the channels of supply—a slow process spread over a great number of years.

[1] Breccia quoted Surius's *Vitæ Sanctorum* in connection with this. See also Antony Martyr, quoted by Weedon and Combe.

[2] My map of Mareotis at the end of this volume shows the area of ancient Lake Mareotis to the zero contour.

As to evaporation, Dr. Ball tells us that careful investigations of the Physical Department indicate that the present daily evaporation of Lake Moeris is 5·5 millimetres.[1] The evaporation from the present Lake Mareotis is said to be less, at 85 millimetres a month, but it may have been more from the ancient freshwater lake.

[1] *The Geographical Journal*, vol. lxxxii. No. 4, p. 294, Oct. 1933.

XII

The Lake in Later Times

STRABO described Lake Mareotis as he saw it just before the beginning of our era. Some time after that the lacustrine recession set in. As the Canopic Nile and the channels which fed the lake gradually silted, the waters of the lake receded, and inland water communication, water supply, and irrigation all suffered. Alexandria and the district of Mareotis slowly declined in consequence.

Finally, about the twelfth century, the Canopic branch had disappeared and the former lake became a salty swamp or *sabbaka*. The very hills, when the roots of the olives decayed, became stony and bare—the good soil of hundreds of years of vegetation being washed away by countless rains.[1]

[1] Professor Borthwick, in discussing aspects of forest biology at the British Association at Aberdeen in 1934, referred to the link between afforestation and rainfall as follows: "Although it has not been definitely decided whether forests increase the rainfall or not, it can be claimed with every justification that the forest is of great importance as a conservator of water and as an equaliser in the drainage of the land. Where no forests exist in the upland or collecting regions of watersheds, the rain falls unhindered, beating the surface hard or eroding it down to the bare rock. There is nothing to check the downward rush of water. . . ."—(*The Times* report.)

Dr. Étienne Combe, in the most recent work on Lake Mareotis,[1] describes it in the Middle Ages as having become a swamp without any importance. By the end of the eighteenth century it was so dry, except at Nile flood-time, that bodies of armed troops could cross it on foot.

As regards the channels or canals which terminated in Lake Mareotis, H.H. Prince Omar Toussun, in his *Mémoire sur l'Histoire du Nil*,[1] tells us of the so-called Alexandrian branch of the Nile mentioned by Ibn Sirapiūn, an Arab geographer of the ninth century A.D. This worthy describes a "river" which ran from the Bahr Yusef in the Faiyum to the "sea" at Alexandria. H.H. Prince Omar identifies this with the Asara canal, mentioned by certain French seventeenth- and eighteenth-century writers, which began in the Faiyum and flowed parallel to the Nile and terminated in Lake Mareotis, presumably the "sea" of Ibn Sirapiūn.

The Prince writes that the level of the Asara canal was maintained by the supply of water from Lake Moeris throughout the year, as a constant level was necessary to provide sufficient water for navigation between Lake Mareotis and Upper Egypt as well as to supply a sufficient quantity of water to keep Lake Mareotis sweet, and in order that the islands of the lake might remain inhabited

[1] *Alexandrie Musulmane : Notes de Topographie et d'Histoire de la Ville*, 1ere Série, S.R.G.E., Cairo, 1933.

[2] Published by l'Institut d'Égypte, Cairo, 3 vols., 1925.

and cultivated to the extent they were. The remains of the quays and jetties which His Highness discovered indicated to him clearly that the level of the lake must have been slightly above that of the sea. In his opinion it was only when Lake Moeris ceased to function as a reservoir that this canal, drying up during the greater part of the year, was silted with sand between El Khatatba and El Teiriya, and Lake Mareotis became saline and dry.

However, this was written before the publication of *Recent Work on the Problem of Lake Moeris*." [1] After three seasons' work and study of the historical-geographical story of this lake from various standpoints—palæontologist, archæologist, and geologist—the authors of this masterly paper found that there had never been any high-level lake (or reservoir) in the Faiyum in historic times. During the earliest Dynasties the lake level was about 2 metres below the sea and very much below the level of the Bahr Yusuf at Lahun, and as Lahun lies about 26 metres above the sea, there was no possibility of the lake water flowing back into the Nile Valley.

The last traces of the Neolithic people, who lived by Lake Moeris, were found on the same beach-line as the first historic (IVth Dynasty) sherds, 2 metres

[1] " Recent Work on the Problem of Lake Moeris," by Miss Caton-Thompson and Miss Gardner in *The Geographical Journal*, vol. lxxiii. No. 1, Jan. 1929. See also a paper by the same authors in *The Geological Magazine* for September 1927.

below sea-level and 140 feet above the present Lake Qarun. The Neolithic culture died out about 4500 B.C., and the sherds dated from 2900–2750 B.C.

Herodotus (Book ii. 149, Loeb edition) first spread the story about the lake being a reservoir into which the Nile water flowed for six months, after which the stored water flowed out for six months for irrigation; but as Professor Spiegelberg [1] has said: "Herodotus has faithfully recorded not history, but stories, historical romances, and legends, as opposed to chronicles and annals . . ." told by the dragomans accompanying him in exactly the same way as the modern tourist is regaled by the dragoman of to-day.

Furthermore, the second Ptolemy Philadelphus (285–246 B.C.) actually checked the inflow into the lake to increase the cultivatable land bordering the lake on which to settle Macedonian soldier colonists.

I think that this clearly proves that Ibn Sirapiūn's "river" and the Asara canal was fed, not from Moeris, but from the Bahr Yusuf, augmented, perhaps, as shown on D'Anville's map, from the Nile north of the Faiyum. As far as Mareotis is concerned, the lower reaches of this canal are clearly shown in Feuille 37 (Alexandrie), of the *Atlas*

[1] W. Spiegelberg, *The Credibility of Herodotus' Account of Egypt in the Light of the Egyptian Monuments*, translated by A. M. Blackman, Oxford, 1927, quoted by Miss Caton-Thompson.

Géographique published with the *Description de l'Égypte*. Here the canal of Asara, or Beheira, is shown passing south of Kom Akhdar and Zāwyet Sālim, north of Abu el Matāmir, south of El Gawazi (Ghayata ?), and north of El Riyashat. Part of the bed of this old canal can be traced on the 1 : 100,000 Sheet No. 88/48, in a series of marshes and pools called, at its western end, Khalig el Awiri.

Mahmud Pasha el Falaki discovered a bridge connected with this canal as far west as Kom Bilal. I think this Asara canal can be identified with the "western river" of the ancients,[1] and with the Lycus River of the Romans, and at its northern, or winding, end with the Dragon Canal of John of Nikiou.

Strabo states quite clearly that there were several canals which brought the Nile water to Lake Mareotis, and in his "Studio sul III° Nomo dell' Egitto Inferiori e più specialmente sulla Regione Mareotica,"[2] Botti traces another of these canals which ran from the Canopic Nile near Naukratis, by Kom Hammād, Kom el Līn, Kimān Barnūgi (The Mount of Nitria), Kom el Akhdar, and entering the lake near Kom Turūga, at one time an important town and the starting-point for the land journey to Cellia and Scetis.

This canal was about 60 kilometres long and was

[1] Breasted, *Ancient Records of Egypt*, vol. iv. p. 125.
[2] Botti, *Bulletin de la Soc. Archéologie d'Alexandrie*, No. 4, 1902.

a most important channel of communication and commerce between the rest of Egypt and Alexandria *ad Ægyptum*. Founded in the sixth century B.C., Naukratis was at one time the most important commercial city in Egypt, and it may have been trading with Greece through this channel before Alexandria was founded.

When the Canopic Nile ceased to function in the twelfth century it seems probable that this canal (like the canal of Alexandria) was extended to the Rosetta branch, and Paul Lucas's map of 1717 shows two such channels flowing from the Rosetta Nile in the direction of Mareotis, but disappearing into nothing as if silted up by that time. The twelfth- and thirteenth-century rulers of Egypt were hardly men to sit down and make no effort to save the ancient water communications with Alexandria and the district of Mareotis. They failed, however, and Alexandria, without its freshwater lake and communications, deteriorated rapidly.

Lake Mareotis was without water—in other words, no longer a lake—for about seven hundred years between the twelfth and nineteenth centuries. It dried up again after the floodings from the sea in 1801–4 and 1807–8, and it was not until 1892 that it became a lake once more, but its western or Abu Sir inlet had been cut off from the main lake when the Maryut railway embankment was constructed about 1858.

Strabo is emphatic on the commercial advantage of Alexandria in possessing two ports—one on the lake and the other on the sea. He mentions also the climatic advantages of the city standing between the lake and the sea, as in summer the lake was full, and therefore healthy owing to the Nile flood, and whether the wind blew from the north or from the south it was cooled by coming over the water.

The ancient canal of Alexandria (the forerunner of the Mahmudiya) which took off the Canopic Nile at Schedia (Kom el Giza), near Kafr el Dawar, was probably a small canal constructed primarily for supplying the cisterns and baths of the city and for irrigating its gardens. It is likely that its flow and level were guaranteed and maintained, while the level of the lake varied. There could, therefore, be no connection between the fluctuating lake and the (high-level) canal.

Dr. Edwyn Bevan, in his *History of Egypt under the Ptolemaic Dynasty* (1927), tells us that according to the *Romance* of Alexander (third century A.D.),

this canal existed before the days of Alexander, and the future site of Alexandria was then occupied by sixteen native villages, including Rakoti, which were watered by twelve subsidiary canals connected with the great canal. The twelve subsidiary canals, it says, all but two, were filled in, and the parallel streets of the city were built over them. The *Romance* is a poor historical authority, but in what it

says of local history and topography, modern scholars are inclined to think it may preserve traditions based on fact.

When the Canopic Nile disappeared, this canal of Alexandria was prolonged to the Rosetta branch at a point near Dessuk, but the neglect of the Turkish régime allowed it to silt up to such an extent that it was not only unnavigable but it brought fresh water for the city only at high Nile. This was the situation until Mohamed Ali Pasha reconstructed it as the Mahmudiya Canal in 1820.

XIII

The "Canal" between the Lake and the Sea

THE level of the water in the ancient Lake Mareotis was governed by the level of the Nile. I have come across no record that the channels which brought the Nile water to the lake fell so low as to stop the navigation of commerce, or the movements of armies, between Egypt and Alexandria. This being so, it may be assumed that the lake was always supplied with some water even at low Nile, its bed being much below sea-level and evaporation being continuous.

There are records of ancient inundations; for example, Sozomen (*circa* A.D. 380) wrote of the Nile overflowing its banks to such an extent that there was dread lest the city of Alexandria and part of Libya (*i.e.* the land bordering the lake) should be destroyed by the inundation at that time. It is possible, therefore, that an attempt was made to cut a spillway through the rocky isthmus at Mex, to allow the lake waters to overflow into the sea when they reached a certain high level.

That such a cut or spillway existed is proved by the fine maps in Thomas Walsh's *Journal of the Late Campaign in Egypt* (London, 1803). There it is shown as an "old canal cut across the isthmus, choked with sand," on the big map, and as a "very deep ravine" on the plan of the operations westward of Alexandria. Wilson also mentions this "canal," and indicates that at the sea end of it there were 4 feet of salt water.[1]

It is true that where this "canal" existed (and exists to-day about 3 metres above the modern lake) was the narrowest part of the isthmus, but the limestone hills were then higher. This is explained by the fact that much of the ridge has been quarried, and what we see to-day, between Wardyan and Dikheila, are the spoil-heaps and stagnant pools left as a result of the quarrying operations.

It is clear from the evidence of Walsh and Wilson that this canal, or ravine, sloped towards the sea in the nature of a spillway from the lake. There was 4 feet of water at the sea end, but the lake end was dry although at that time the lake was full, the British having flooded it to sea-level in June, and Coote advanced across the ravine in August.

A further proof that the level of the ravine must have been high, is that the French made no attempt

[1] Wilson, *History of the British Expedition to Egypt*, London, 1802, p. 188. The French map in the *Description de l'Égypte* marks the "canal" as "Ancienne communication du Lac Mareotis avec la Mer."

to deepen it and flood it from the lake or the sea to strengthen their position on the west.[1]

Another explanation of this so-called canal is that it was merely an ancient defensive dry-ditch or moat in front of an old line of outer fortifications on the western outskirts of the suburb of Necropolis. There are still remains of later fortifications on the existing overflow canal at Mex, which point to the fact that this moat or "canal" was used in fairly recent times (nineteenth century) as a defence towards the west, the tradition being that all hostile movements against Alexandria in ancient times from this direction had been along the Taenia or Abu Sir ridge. Therefore this form of defensive work (fortification and moat) may have been of ancient origin.

Dr. Combe definitely states that there was no canal between the lake and the sea—"il est impossible de trouver la moindre allusion à ce canal dans le texte de Strabon, pas plus que dans les autres descriptions anciennes."

So historically there is no support for this canal, and it seems reasonable to suppose that, if one had existed, the sea would have run into the lake the moment the lake fell below sea-level, especially during the north-westerly gales in winter when the sea rises. If the lake had been contaminated by sea water the papyrus and the bean plantations of the

[1] Also when the French put boats on Lake Mareotis they had to drag them across the isthmus from the western harbour (Wilson, p. 181).

lake would have suffered, to say nothing of the water lifted from the lake for irrigation, and the lands on the border of the lake which we know were cultivated.

There is the theory that the bed of the western arm of the lake has risen, but this is ruled out by the fact that it is still over a metre below sea-level at Abu Sir and that the sea water ran up there in the flooding of 1801–3. Another theory is that the lake bottom fell when the outer limestone ridge fell. Dr. Hume, however, seems to imply that the lake and the inland ridges have, if anything, risen.[1] But such a rise in the lake bed and the Gebel Maryut ridge, and the Bahig-Hammam depression behind it, may have taken place before historical times, and it is yet to be shown that it was contemporary with the historical sinkings of the front limestone ridge and islands of Alexandria.

There is no record or trace of any other connection between the lake and the sea through the Abu Sir limestone ridge, the height of which is from 10 to 30 metres above the sea, and the lagoons west of El Imayid, where the sea sometimes washes over the sand-spit, have no connection whatever with the Mallāhet Maryut depression.

According to some people the Abu Sir ridge has been raised by some upheaval, but this would have been curious in view of the fact that the whole

[1] Hume and Hughes, *The Soils and Water Supply of the Maryut District*, Cairo, 1921, pp. 2, 3, and 36.

Delta coast from Pelusium to Alexandria is known to have *fallen*, and further west the islands of Pedonia, Aenesipasta, etc. (mentioned by Strabo), have sunk below the waves.

It is admitted on all sides that no *branch* of the Nile terminated in Lake Mareotis, but there were certainly navigable channels leading into the lake. In 1920 Mr. T. H. Stern, of the Irrigation Department, made a careful survey of the lake. In all, 680 samples were taken, and the soil was found to be a very compact clay, and, except near Ezbet Khurshid, where the bulk of the soil appeared to be Nile alluvium, there was an absence of soil, indicating that a branch of the Nile ever flowed into Lake Mareotis. Dr. Hume found the soil in the bed of the lake near Abu Sir was a selenite plastic clay, below which was sand ; and the water which lies close to the surface was practically brine. The bed of this part of the lake is most treacherous for cars.

The conclusion seems to be that the lake soil has become so highly saline owing to the process of wetting and evaporation over a period of hundreds of years, and perhaps this process was accentuated by the sea water flooding it for nearly three years in 1801–4, and for some months in 1807–8.

This point of view seems to be supported by Dr. Hume on pages 189–190 of volume i. of his great work on *The Geology of Egypt* (Cairo, 1925).

XIV

The Flooding of 1801–4 and 1807–8

WHEN the bed of Lake Mareotis was flooded in 1801–4 the sea was admitted through the dyke which separated Lake Maadiya (or Abu Kir) from the old lake bed of Mareotis. This dyke carried the canal which supplied the fresh water to the cisterns of Alexandria prior to the construction of the great Mahmudiya canal by Mohammed Ali Pasha in 1820. The dyke was breached by the British, under General Sir John Hely-Hutchinson, to cut off the freshwater supply of the besieged French garrison in Alexandria and to stop reinforcements reaching them from the main French force in Cairo.

The water was let in on 12th April 1801, and the inrush was so great that the level of the sea water in Lake Maadiya decreased, but by the 7th May the levels of the two lakes began to equalise, and the violence of the current through the breach diminished sufficiently to allow some shallow-draft gunboats to pass through from Abu Kir bay to Lake Mareotis,

so as to operate in the rear of the French in Alexandria. The water in the lake now extended up the Wadi Maryut as far as " la Tour des Arabes " (Abu Sir).

By the end of June 1801 the area of the water in the lake was at its greatest, and it was not until 1804 that the breach was repaired and the freshwater canal connected once more with Alexandria, to the joy of the inhabitants, then a very small community of a few thousand souls.

It is not often called to mind that the whole of Major-General Eyre Coote's Division, which was to attack Alexandria from the west while Hutchinson besieged it from the east, was transported in four hundred boats on the lake from the east to the west side of Alexandria. Coote's division, consisting of a Brigade of Guards under Lord Cavan, the First Brigade of the Line under General Ludlow, and the Second Brigade under General Finch (over 4000 men), landed from the lake flotilla, protected by gunboats, at a spot on the north shore of the lake close to where the F.D.A. " desert gate " stands today. This occurred on 17th August 1801, and Coote advanced along the isthmus in line with gunboats on his right flank on the lake and with other gunboats on his left on the sea. By the 22nd the French advanced posts had been driven back to the walls of the town, and on 2nd September the French, under their gallant commander Abdallahi François Jacques Menou, capitulated.

Thus we see Lake Mareotis once more full of water for the space of nearly three years, but few people are aware that the lake was flooded for a second time in 1807. On this occasion the garrison in Alexandria was an English one under Major-General Fraser, and it was for their own defence against the forces under Mohammed Ali Pasha that they decided to flood the lake once more. Actually the freshwater supply by the canal had been cut off already by Elfi Bey near Damanhur. The opening in the dyke to flood the lake was cut in May 1807, and the lake had filled sufficiently by the 21st of that month to allow in twelve British gunboats to operate on it. Towards the end of 1807 the British evacuated Alexandria, and the dyke and canal were repaired in February 1808, and the lake dried up once more.

The third and final flooding of the lake occurred in 1892, when the irrigation system in the Beheira was reorganised and the old lake basin of Mareotis was used for the various new drainage canals to flow into.

In order to keep the modern lake within certain bounds the pumping station was constructed at Mex ; these pumps are constantly working and they keep the level of the lake about 3 metres below sea-level. It is stated that about 650 million cubic metres of water are pumped into the sea annually.

Before long the day will arrive when the com-

plete draining of Lake Mareotis will be carried out. This great land reclamation scheme was very near to Lord Kitchener's heart, and only the Great War prevented its consummation. All the details were worked out, and when it is accomplished about 40,000 feddans of lake will be brought under cultivation in the same manner as was done by the Abu Kir Land Company many years ago.

With the extension of the Nubariya Canal and other works, including the reclamation of the lake, it has been estimated that the total new land available for cultivation by the excess population would be about 112,000 feddans. This scheme did not include the long western inlet of the Wadi Maryut, which was cut off from the main lake basin in 1858 when the Maryut railway embankment was constructed.

Herr Ewald Falls, who worked in the Maryut with the archæologist Monsignor Kaufmann in 1905–7, in one of the surprising statements in his almost worthless book, *Three Years in the Libyan Desert* (English edn., London, 1913), alleges that the British in 1801 " let the sea rush over the land, so that thousands of people were drowned, and one hundred and fifty towns and villages swallowed up by the waves. Mohammed Ali tried to save what was left. . . ."

This statement is quite unsupported by fact, and even Baedeker in his guide (*Egypt*, 1929) mentions

nothing of the thousands drowned, but both he and Falls make the incorrect statement that the lake was flooded by cutting through the " dunes of Abu Kir."

As a matter of fact the rise of the water was so slow that the lake took over a month to fill, and it must have been some time before the water reached the villages on the borders of the former swamp.

M. Combe, who is naturally quite unprejudiced, says : " Quelques villages d'Arabes et des champs de céréales sont, dit-on, détruits. On mentionne le chiffre de 20 villages, même de 150 et plus de mille acres de bons terrains (G. Le Père), . . . ont déjà détruit 16 villages (Whittman)." It will be observed that there is no mention of any loss of life. Further, I have examined very carefully Feuille No. 37 of the *Atlas Géographique* of the *Description de l'Égypte* which marks very clearly the limits of the English inundation, and I can find only fourteen villages which would have been destroyed or affected, namely, Tell el Genan, Koum el Aarab, Dedoār, Berdeleh, Korbāni, Basligoūn, Sanhoūr, Tell el Ahmar, El Kazi, El Nemeirieh, Gamaa, Batoures, Terougeh, El Gawazi.

Finally, let it be credited to General Hutchinson that he consented only reluctantly to the flooding of Lake Mareotis because " there were very serious objections to the measure. First, the mischief it might do was incalculable. The Arabs could give no information where such a sea would be checked :

the ruin of Alexandria was probably a consequence . . ." (Wilson, p. 54).

Both Baedeker (? Steindorff) and Falls seem to be ignorant that the repairs were made by the Porte and not by Mohammed Ali Pasha, and that the lake was dry again between 1808 and 1892.

XV

The Causeways over the Lake

ACTUALLY the flooding of Lake Mareotis in April 1801 cut off the French communications only by the usual direct road to Cairo by way of Damanhur and Rahmania ; the route by Rosetta was already barred by Hutchinson and Eyre Coote, but there still remained a third route, little noticed by historians but clearly marked on the map of Alexandria (Feuille No. 37) in the *Atlas Géographique* of the *Description de l'Égypte*. I refer to the desert route to Cairo through the Maryut district.

The map shows two passages or causeways across the lake, or *sabbaka*, both marked " route suivie par les Français pour se rendre au Caire." [1] One passage was over much the same route as the modern Amriya causeway, and the other was over a lost causeway, part of which is to be observed near the site of Mareotis town. These causeways were probably of late construction to cross the mud when the lake began drying up—one to serve the town of

[1] Actually the words are " Route suivie par les Français pour se rendre au Caire après l'inondation du lac Mareotis," but only the Abu Sir causeway could have been used after the inundation.

Mareotis, and the other to serve the desert route to Cairo.

When, on 6th May 1801, the sea water reached Abu Sir, the way over these two causeways would have been impassable, but there remained the third high-level causeway at Abu Sir, and supplies continued to pass this way to the French in Alexandria until Coote landed on the west side of the town on 17th August.

Further proof that the French had been using the Amriya causeway to communicate with Cairo before the flooding is the fact that they fortified the two islands (the Geziret Umm Sigheiw). This is shown on the map made by Lieut. Thomas de Havilland of the Madras Engineers in 1802, now in the Alexandria Museum. He shows the position of the French redouts on the two islands of the causeway, which were constructed " to secure a communication with the country," *i.e.* with the desert route to Cairo. They are shown as " Iles Fortifiées " on Feuille 37 of the *Atlas Géographique.*

But the earliest causeway across Lake Mareotis was the great one at Taposiris Magna, and there is another ancient one, little known, about 7 or 8 kilometres west of Abu Sir.[1] It is dead straight, and is faced with masonry, but the northern end of it has disappeared, the salt having eaten away the

[1] This causeway is not to be confused with the modern earth causeway which once carried a decauville railway across the valley from the gypsum factory to the sea.

stone blocks. A fifth causeway, or rather jetty, shown on Feuille 37, still exists at the site of an ancient town north-east of Bahig, which I shall describe in detail in a later chapter.

This fine map marks likewise a very interesting jetty running into the lake from the shore near Nuzha. It is built of massive stone blocks, and exists still under the surface of the modern lake, being nearly 5 kilometres long. Its course is irregular, pointing to its gradual prolongation to " the limit of navigation " when the lake began to recede. I suggest, therefore, that this jetty was an attempt to keep Alexandria in touch with the gradually expiring inland navigation system of the ancient lake—navigation which had been going on, moreover, for centuries.

It has been suggested that it was a causeway made for crossing the lake, and that the French used it between Alexandria and Beda in 1801. However, there are two arguments against this : firstly, it does not run in the direction of Beda, but wanders rather aimlessly towards the south ; and secondly, the *Report of the French Mission* (vol. xviii. p. 11) states clearly that the shortest route was across the *bed* of the ancient lake, which was practical only in summer. There is no mention of any causeway being used.

At the time the Report was made, local tradition indicated that this jetty was a wall erected in past

times against inundations of the lake, but I think that this is incorrect, because it is low and under the water with the lake level 3 metres below sea-level; furthermore, Eyre Coote's Division sailed over it in boats when the water of the lake was at sea-level.

In passing, I may say that Mr. G. S. Laird-Clowes paid tribute to the accuracy of the French Sheet No. 37 when the modern contoured map of El Beheira was made; he found "in comparing the two maps, it is at once evident that, over the Maryut area at any rate, their agreement is extremely close." [1]

It would seem that the Amriya causeway was remade by Said Pasha as a means to get to his hunting-box at Amriya before the railway was constructed in 1858. That this causeway still existed in 1881 when Arabi Pasha retired from Alexandria to Kafr el Dawar, is proved by the fact that the trenches and gun emplacements he constructed to guard the causeway-head on the Amriya side, and to prevent the English turning his left flank, still exist.[2]

Thereafter this causeway was washed away by seasons of rain, to be rediscovered in 1916. When

[1] G. S. Laird-Clowes, "The Contoured Map of Beheira Province," in *Cairo Scientific Journal*, vol. vii., 1913.

[2] Other trenches and gun emplacements exist at Sidi Ali Mirghib, which were constructed by Arabi to guard against attack along the Maryut railway causeway.

Mr. Jennings-Bramly decided to connect the Maryut with Alexandria by road he had to use the foundations of this old causeway, because the State Railways' estimate for broadening their causeway to take a motor road was excessive. The only available materials to start the work were five baskets and six shovels, but he was fortunate in having as Maamur of Amriya, Mohammed Bey Hussein, now H.M. King Fuad's Second Chamberlain. This officer, with characteristic energy, completed the causeway and the road on either side, so that Alexandria and Amriya were soon in communication by road once more.

Shortly afterwards this road was prolonged westwards to join the ex-Khedive's motor road from railhead to Salum, and two or three years later Mr. Bramly marked out the first road from Bahig to the Pyramids, and another road from Borg el Arab to the Bahariya oasis. It is most unfortunate that the Amriya causeway and road have been allowed to deteriorate into their present deplorable state in spite of the heavy toll collected.

The existing roads in the Maryut district may be detailed briefly as follows :

(*a*) The Alexandria–Marsa-Matruh–Salum road running westwards.

(*b*) The Alexandria–Amriya–Natrun–Cairo road.

(*c*) The Borg-el-Arab–Bahariya Oasis road.

(*d*) The Bahig–Abu Menas–Alam Shaltūt, which joins the Amriya–Natrun road at Alam Shaltūt.

(*e*) The Gianaclis road from Amriya aerodrome to Gianaclis Estate.

(*f*) The " summer " road from kilometre 4 to Sidi Kreir and Abu Sir.

(*g*) The " winter " road on the top of the Gebel Maryut ridge.

(*h*) The old military road made in 1916 from Alamein to the Wadi Hemeimat.

(*i*) " Ball's road " from the old boring camp at Alamein to Minqar Abu Dweis.

(*j*) Prince Omar Toussun's road from Alam Shaltūt to Qasr el Qataji.

(*k*) " Walpole's road " from Hammam to El Imayid and Derasiya.

XVI

Rainfall and Ancient Water Storage

COLONEL MEINERTZHAGEN, in the first chapter of *Nicoll's Birds of Egypt*, details some of the evidence proving that there was a greater rainfall in early times, and perhaps the most recent evidence is the disappearance of the ostrich from the Libyan desert.

I understand it is a disputed question whether there were not springs in the Wadi Abu Mena and elsewhere in the Maryut in recent historical times. Some day scientific investigation will give us definite information. Miss Caton-Thompson, investigating much farther south near Kharga Oasis, found that there had been springs in what is now totally barren desert.[1]

In the meantime, I think Professor Breccia has given the generally accepted view in his *Alexandrea ad Ægyptum*, in saying " that the gradual drying-up of all the regions of Northern Africa which had begun in prehistoric ages was continuing slowly down to historic times."

[1] " Kharga Oasis," by G. Caton-Thompson, in *Antiquity* for June 1931.

Mr. G. W. Murray of the Desert Survey has suggested that the rainfall was not greater in Græco-Roman times, but was more evenly distributed over the year, and that the rain water was carefully stored in a wonderful system of rock-cut cisterns.[1] Colonel Meinertzhagen has pointed out that the present " surface water is now quite inadequate to fill them (the cisterns) even in part." I think, however, as far as the Maryut is concerned, this depends entirely on the year.

Dr. Hume states that the present rainfall is variable from 40 to 260 millimetres. Recently there were barley crop failures, or partial failures, for want of sufficient rain in 1931, 1932, 1933, and 1934, whereas in 1915–16 and 1929–30 the rainfall was excessive. Even a thousand years ago they had bad times, and Amélineau, quoting from the *Synaxarium*, tells us that " the Patriarch Shenuda caused rain to fall on his territory (in the Maryut), which had been visited by drought for three years." [2]

I think it will be accepted that the great system of Græco-Roman wells, cisterns, and *karums* (or artificial catchment areas) grew up as the rainfall gradually lessened. Therefore we may assume that the rainfall may have been a good deal more two thousand five hundred years ago.

In conclusion, I would say that the country has

[1] *Journal of Egyptian Archæology*, vol. xvii. Parts 1 and 2, May 1931.
[2] *La Géographie de l'Égypte à l'Époque Copte*, Paris, 1893.

not only changed with the gradually declining rainfall, but also with the drying-up of the fresh-water lake. On the shoreline of the ancient Mareotis there must have been quite 200 kilometres along which water could have been lifted by sakias or shadufs on to the neighbouring land.

There is, at present, no evidence of any ancient irrigation canals in the interior of the Maryut, and the varying levels of the country would not appear to have allowed their construction, but there were stone water-channels from the wells and sakias which must have played an important part in the life of the ancient inhabitants.

The old wells were very numerous ; many may still be covered with the sand of years ; some are dry now, and some have altered in the quality of their contents.

Dr. Hume, in his great work on the *Geology of Egypt* (vol. i. pp. 128–129), thus writes of the wells in the Maryut district :

Coming from the west, as we approach within 80 miles of Alexandria, cisterns become more and more rare, wells increasingly taking their place. These are of three kinds : (1) those sunk along the shore-line, (2) in the depressions between the prominent ridges, and (3) on the ridges themselves, or on the upland plateau some distance from the sea. As already noted, a closer study of these wells has shown that the water is almost invariably present at sea-level, its depth corresponding closely to the

height of the surface above sea-level. As a consequence, wells sunk along the shore-line are usually very shallow, while those where the plateau rises to over 30 metres in height, are also 30 metres, or 100 feet, deep. As a result, there are scenes of great activity and animation at watering-times, hundreds of sheep being collected together at the spot, while men and women seize the rope which brings up the (leather) bucket with the precious fluid from below.

Most of the wells in the depressions between the ridges are saline in quality, while there is marked improvement in those which are on the sides and summits of the ridges themselves. There is also a general tendency for the water to improve from west to east which may be attributed to the influence of underground supplies from the Nile.

The second system of water supply was that stored in the rock-cut, and sometimes plastered, cisterns. The number of these ancient cisterns increases in the western part of the Maryut, and are an indication of the poverty of the soil and the subsoil water in those parts. Dr. Hume writes :

Some of these have an estimated total capacity of over 10,000 gallons, as, for instance, at Saleh Masud (10,900 gallons), Abu Hamad (13,500 gallons), and El Khāssa (18,500 gallons). Twenty-six cisterns are recorded on sheet K (El Hammam sheet) of the 1 : 100,000 map, and thirty-three on sheet J (El Alamein sheet) to the east, one of these, at Sultan Omar, having an estimated capacity of 32,000 gallons.

There are, no doubt, many other cisterns still buried under the soil and they are usually cut out

of the rock with small man-holes for drawing the water.

The third system for collecting water was that of the artificial catchment basins or *karums* (*karm* in the singular). Of these Dr. Hume writes :

Their dominant rectangular form and distribution are clearly marked on the 1 : 50,000 Survey maps of the Maryut District, and it is also noticeable that the vast majority do not begin till about the 5-metre contour above the sea-level and are seldom found above the 40-metre contour.

The mounds are usually from 3 to 4 metres in height, and do not as a rule extend completely round the enclosed space. . . . There seems little doubt that these features are connected with the ancient irrigation scheme of the country, the raised soil-walls allowing local run-off of the rain into the central area and also to the soil bordering their outer sides.

There are some fine examples of *karums* south of Borg el Arab and Ikingi Maryut stations. The interiors of these catchment areas contained the ancient vineyards and oliveyards.

Mahmud Pasha el Falaki, who made a careful examination of the Maryut as long ago as 1866, wrote :

Les champs innombrables qu'on y voit encore aujourd'hui portant les noms de karm qui veut dire vignoble, l'infinité de villes ou villages dont on distingue encore les ruines dans cette partie, les usines à vin et les pressoirs que nous y avons découverts par les fouilles, les citernes, sakiéh, et puits dont le sol

est jonché, enfin tout prouve la prospérité du pays, l'abondance de ses produits en vins et en huiles et atteste la véracité des récits des anciens écrivains concernant la beauté de ce pays vignoble et la richesse de sa nombreuse population.[1]

[1] Mahmud Pasha el Falaki, *Mémoire sur l'Antique Alexandrie, ses Faubourgs et Environs*, Copenhagen, 1872.

XVII

Ancient Sites and Places of Interest in the Maryut

ENATON

LEAVING Alexandria by the western or Moon Gate, the fifth-century Roman traveller would pass through the suburb of the Necropolis, and at the ninth milestone on the road to Cyrene he would come to the monastery of Enaton in Mareotis, and the church of St. George. Known also as Deir el Hanatūn and El Zajāj, it was once celebrated, for here the Syriac version of the Bible was revised, and here the union of the churches of Egypt and Antioch was accomplished. In the church many holy patriarchs were buried, including Severus of Antioch.[1]

Enaton was actually the second of the monasteries on the road from Alexandria to Cyrene, the first being Pempton, at the fifth milestone, and the third Oktokaidekaton, at the eighteenth milestone.

Destroyed, or perhaps only ravaged, during the Persian invasion, the remains of Enaton have almost

[1] See Butler, *The Arab Conquest.*

totally disappeared. The site is close to the village of El Dikhela, and what was found there is described by Professor Breccia in the second volume (1907) of the *Bulletin de la Société Archéologique d'Alexandrie.*

CHERSONESUS PARVA

North round the bay of Agami, on the site of the existing forts of El Aiyana and El Agami, was the ancient fortress of Chersonesus. The French army Napoleon brought to Egypt landed here in 1798. They brought the fortifications up to date, so that when Eyre Coote was advancing along the Dikhela hills on 18th August 1801, he had to attack and take this French outpost on his left flank. I think it was the first battalion of the 54th Regiment which was detached to take the Marabout Fort, as it was known to our forefathers, and to this day the Dorset Regiment have the name "Marabout" among their battle honours. The British fire was so effective that Coote was soon able to summon the garrison "in the name of humanity" to surrender. In complying, the French commander "trusted" that the British would agree to the French terms of capitulation with the "generosity which characterises your nation"—for those were the days when we were highly civilised.

One can see to-day the earlier guns, muzzle in the ground, so placed for warping round the later Armstrong guns of Ismail Pasha which were put out

of action by H.M.S. *Condor* one summer's day in 1882, and it is somewhat remarkable that in spite of all this fighting, the marabūt Sidi el Agami's tomb remains untouched and serene.

TAENIA

The long strip of land lying between Arabs' Gulf and the Mallāhet Maryut, and known in ancient times as Taenia, has been described already. In this country were situated Nicium, Oktokaidekaton and other places. All along the limestone ridge of the Taenia of Taposiris will be found the abandoned quarries from which the stone was taken to build the ancient towns and villages of the Maryut. The little square buildings one sees on the way to Abu Sir by the " summer " road are the " martello " towers erected by Said Pasha. During the last few years much of this land has been planted with fig trees on the sheltered slope of the ridge.

SIDI KREIR

A few kilometres to the east of Sidi Kreir will be found a stone jetty, high above the present lake, an enormous quarry, and many foundations—perhaps the site of Nicium. Between Sidi Kreir and Kom Nugūs, and between the road and the lake, are many interesting remains worthy of examination.

PLINTHINE

Situated as it was on Kom el Nugūs, Plinthine must have looked imposing even beside Taposiris,

which was close to it. Athenæus wrote that Hellanicus alleged that the vine was first discovered at Plinthine, and Plinthine must have been important, for anciently the Arabs' Gulf was known as the Gulf of Plinthine. Excavations at this site would unquestionably yield interesting results.

TAPOSIRIS MAGNA

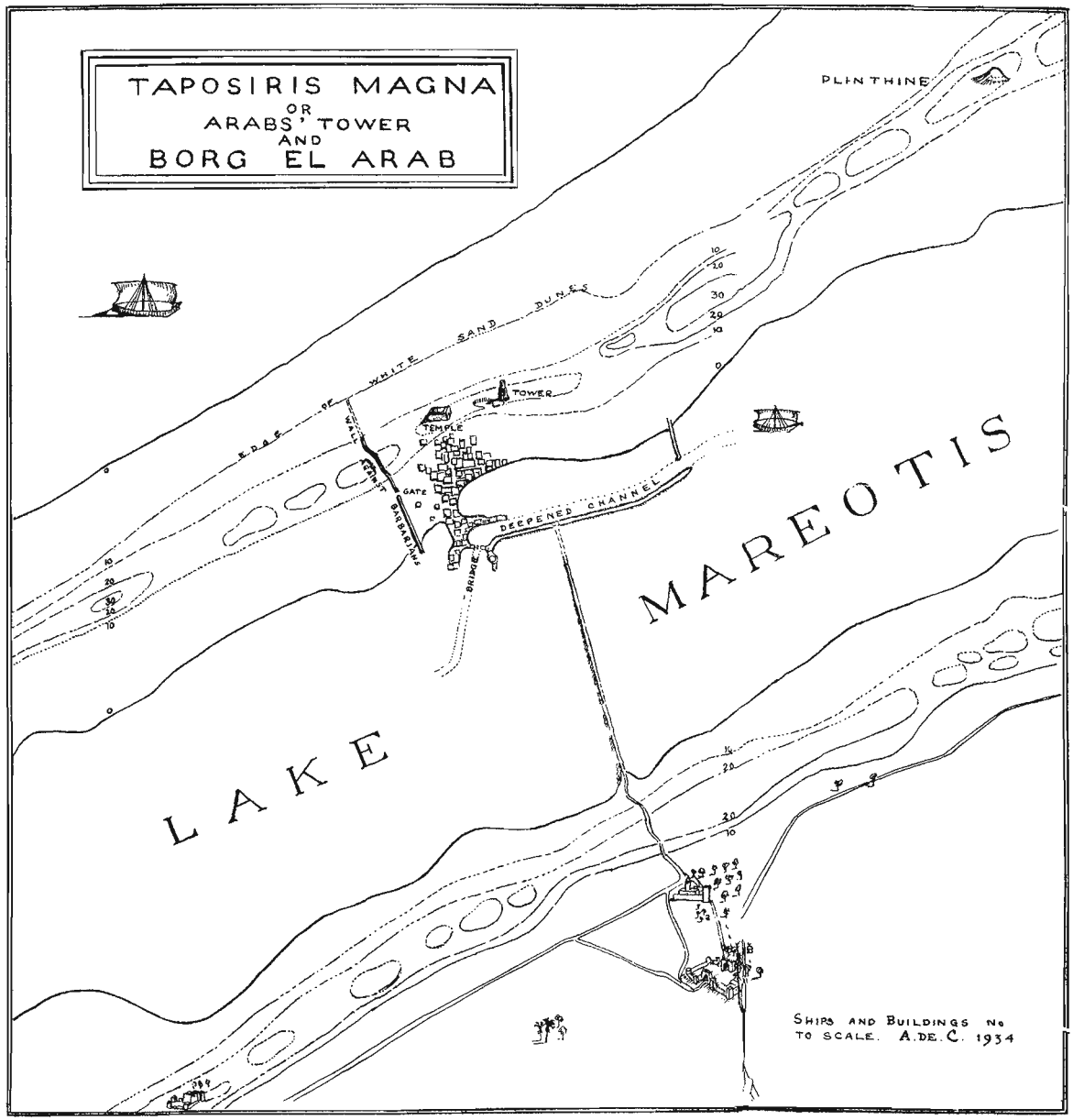
As all the wonders of ancient Alexandria have gone, this is the finest ancient monument left to us north of the Pyramids. How was it that this large and important Temple of Osiris came to be built so far from Alexandria? I think the answer is that there was a town here long before this Ptolemaic temple was built. That this town was also important was due to the fact that it had been built at the navigable limit of the long western arm of the lake. It was the Geneva of the ancient Lake Mareotis before even Alexandria was built, and perhaps there was a town here in the time of the Harpoon Kingdom.

Travellers and merchandise from Memphis, Naukratis, and other towns in Egypt, going to the west would naturally come down the Nile and into Lake Mareotis to the western limit of navigation before using the more tedious land transport. Likewise travellers and the oil, wine, beer, and dates from the western part of the nome and from Libya would be shipped on boats at Taposiris for the towns

in the interior of Egypt. Hence the extensiveness of the quays and jetties we see at Abu Sir to-day.[1]

According to Callisthenes, Alexander the Great visited the earlier Taposiris on his way to Siwa. The actual Temple of Osiris has gone, but the high, massive walls of its enclosure remain. This enclosure, which dates from the fourth century B.C., is nearly 100 yards square with immensely thick walls, and it is small wonder that its later uses were as a fortress and as a quarantine station for caravans from the west destined for Alexandria. Inside are vestiges of the Christian Church which replaced the Temple, in A.D. 391, probably, when similar temples were destroyed in Alexandria. Justinian built the "town-hall" and the public baths, and perhaps it was in his time that Taposiris took the place of Marea as the capital of the Mareotic nome. The baths are to be found below the temple enclosure. Lower still are the traces of the quays and the earthwork jetties, and the remains of a fine bridge which allowed the water to flow between the upper and the lower lakes, and connected Taposiris with the interior of the province by the great causeway. The openings between the central pier and the abutments of this bridge are nearly 3 metres wide and the floor of the bridge must have been about 3 metres above the lake bottom.

[1] The plan facing this page has been compiled from the Survey Map, Sheet No. 88/42, and from aerial photographs and examination on the ground. The result gives some idea of the size of the ancient lake harbour.


TAPOSIRIS MAGNA
OR
ARABS' TOWER
AND
BORG EL ARAB
PLINTHINE
EDGE OF WHITE SAND DUNES
TOWER
TEMPLE
WALL
GATE
AGAINST BARBARIANS
BRIDGE
DEEPENED CHANNEL
LAKE
MAREOTIS
SHIPS AND BUILDINGS NOT TO SCALE. A.DE.C. 1934

Aerial photographs show distinct signs of a deepened channel as indicated on my plan of the harbour.

As regards the ancient pre-Ptolemaic town, that intelligent observer, Bayle St. John, who visited Abu Sir nearly a hundred years ago, pointed to a clue when he wrote :

> We noticed that the western or back wall (of the temple enclosure) was composed in part of pieces of columns sawn into proper lengths, with the interstices filled up by cement. A squared stone facing, however, both outside and in, had formerly concealed these incongruous materials, which doubtless belonged to some building of much more ancient date.[1]

I may add, however, that the columns are lightly fluted.

West of the temple are the remains of the wall erected across the Taenia against the Barbarians (*i.e.* the Libyans), and it was, possibly, part of the earlier scheme of buildings. It ran at right angles to the sea across the ridge into the lake. The gate in this wall between East and West is to be found on the south side of the ridge. The average thickness of the wall at its base is nearly 2 metres.

The other remaining monument is the fine " Arabs' Tower " of Abu Sir ; Breccia wrote that Professor Hermann Thiersch believed that this tower was " a lighthouse intended to protect navigation

[1] Bayle St. John, *Adventures in the Libyan Desert*, London, 1849.

along the coast between Plinthine and Taposiris," [1] but as Plinthine was only $4\frac{1}{2}$ kilometres away from Taposiris there does not seem to be much in this theory. It seems much more likely that it was a combined watch-and-signal tower which was also a fine shore mark for mariners proceeding to Alexandria. As a signal tower it was one of a series along the coast which passed signals between the Pharos of Alexandria and Cyrene, and the next tower westwards was, perhaps, in the fortress on Khashm el Eish. Furthermore, it seems that the Abu Sir tower would have been more useful in the capacity of a signal station to pass on details of news, government orders, and the movements of caravans and ships, than as the lighthouse of an obscure, exposed, little harbour, if a maritime harbour existed, which is very doubtful, as Strabo is particular in saying that this Taposiris was " not that situated upon the sea." [2]

Mr. E. M. Forster [3] confirms this view when he mentions that the possible second function of the Pharos of Alexandria was to heliograph messages, and he writes : " Westward it could signal . . . to Chersonese. And further west, the system was prolonged into a long line of watch towers and beacons that studded the north African coast, and connected

[1] Breccia, *Alexandrea ad Ægyptum*, p. 79.

[2] The other Taposiris (Parva) was situated on the sea near Montaza. Strabo, *Geography*, Bohn's edition, vol. iii. 14.

[3] E. M. Forster, *Alexandria : A History and a Guide*, pp. 16, 133–137, and 194.

Egypt with her daughter kingdom of Cyrene." Elsewhere he says that there can be no doubt that the tower of Abu Sir " was modelled on its gigantic contemporary—scale about one-tenth—and it is thus of great importance to archæologists and historians."

Meanwhile the hand of Time is slowly destroying these most interesting buildings, and it is earnestly hoped that the Société Royale d'Archéologie of Alexandria will take further steps to conserve them. If they do this, they will not only comply with the third article of their statutes, but more important still, they will earn the gratitude and esteem of generations to come.

So far some repairs have been carried out, but much remains to be done, and with care to replace the fallen stones. The case of the tower is even more urgent. An admirer of these buildings and of the Pharos of Alexandria wrote recently :

I am really worried about the repairing of many important monuments of Greater Alexandria that are in the open. Parts of the Temple of Osiris at Abu Sir are in a dangerous condition. It is obvious that the impressive Ptolemaic beacon near the temple is disintegrating rapidly.

The greatest thing in Alexandria is the Pharos. . . . Almost certainly, stones of the original Pharos exist in position. . . . Apart from its own value, therefore, as largely a mediæval monument, Fort Kait Bey is of priceless value as indicating and preserving a structure which the ancients considered as

of such transcendent importance, that they put only six other things in the world in the same class. . . .[1]

It is ambitious, perhaps, to attempt to draw this picture, but if one looks up from the lake bottom at Abu Sir, it is pleasant to visualise Taposiris Magna as it was in the halycon days of long ago :

Dominating all was the Temple of Osiris and the Watch Tower, on the hillside below were the public buildings, travellers' and pilgrims' rest-houses, and the cottages of the traders, agriculturists, and fishermen. The foundations of these buildings can be traced right down to the ancient lake-shore, and, no doubt, these lower buildings, warehouses, and so on, were protected from the rise of the water by quay walls. Moored at these quays and along the long jetty in the lake, was the shipping engaged in the transit trade between Egypt and the western provinces, and the fishing craft.

One can imagine the animation and forenoon movement that once went on here, the noise of the ropes running through the blocks stowing and loading cargo, of the voices shouting or singing across the water. One can see the smoke rising from the houses where the midday meals are being prepared, and the flags flying from the tall poles set in the façade of the Temple pylons. On the Watch Tower are the signallers busy with helio or smoke signals.

At night—the flash of the signal-flame high in the

[1] Letter in *The Egyptian Gazette*, 15th March 1934.

starry sky, the lake harbour silent now, but the beat of the sea on the shore distinctly heard.

The gate in the wall erected against the Barbarians would be securely closed at night, leaving outside only the numerous animals and people of the western caravans, the lights of their camp-fires indicating their presence on the hillside to the south-west of the Temple.

EL BORDAN (CHIMO)

About 20 kilometres west of Abu Sir, on the same limestone ridge, is El Bordān ; the Burden of Pacho (1824), the Burdan of Robecchi-Bricchetti (1885), and the El Bouran of Fourtau (1904). Bayle St. John (1847) described the place as follows : " . . . the valley narrowed to a pass, the greater part of which we found occupied by the ruins of a large enclosure with stone walls, now overthrown to the ground, but which had probably been a fortified camp."

The Beduin still know this place as El Bordān, and it is all the more regrettable that the Survey ignore the name on their 1 : 100,000 Sheet No. 88/42. They mark instead " Ancient wall," which is certainly the ancient fort in question. One can get to it by the road which runs diagonally across the Mallāhet Maryut from Hammam to El Imayid.

This site, which was probably the ancient Chimo (vicus), was a stronghold which barred the way

from the west along the Taenia. The enclosure is over 400 metres square, walled on the south, east, and west; while on the north, or sea, side the wall may lie buried under the sand. Along the south wall one can trace the foundations of several small projecting towers, and the walls themselves are from 1·10 to 1·25 metre thick at the base; but even more massive is what I take to be the central keep in the middle of the enclosure. There is also a fine vaulted cistern and remains of other buildings, but some of the stones have, as usual, been removed to cover Beduin graves.

In the days when it was built this place was no doubt situated at the end of a constantly wet and impassable lake bed, and therefore at a strong point between the end of Lake Mareotis and the sea. It was, in fact, at the western entrance of the Taenia, and sufficiently important therefore to be identified with Ptolemy's Chimo. M. René Fourtau suggested that this Chimo may have been identical with Strabo's Cynossema, and said that the place was destroyed by Uqba-ibn-Nafi, one of the generals who went on the expedition of Amr-ibn-el-As to conquer the provinces west of Egypt in the seventh century.[1]

[1] Fourtan, "La Côte de la Marmarique," in the *Bulletin de l'Institut Egyptienne*, 5eme Série, Tome viii., 1914. Fourtau gave no reference, and I have been unable to verify it, but it may be in M. Caudel's *Les premières Invasions Arabes dans l'Afrique du Nord*, Paris, 1900. It is interesting to note that one of the wells between Abu Sir and Bordan was known as Bir el Nafi (St. John, 1847).

EL IMAYID

El Imayid has a sad story attached to it. Many years ago there was a beautiful castle standing there, built in the thirteenth century by Sultan Baybars. It has entirely disappeared.

Dr. August Scholz,[1] who travelled with General Baron von Minutoli and should have known better, described the building as a mosque, and pretended the inscription on the building contained "some verses from the second Sura of the Koran"; and "the shape of the letters and the nature of the building do not allow us to date it further back than the fifteenth century." The learned Professor of Divinity was entirely wrong, and he reminds one of the statement of his countryman Falls, who alleged, on page 212 of his *Three Years in the Libyan Desert*, that "a ruinous mediæval mosque with an Arabic inscription" was still standing at El Imayid in 1905–7! It had certainly disappeared before this date.

Jean Raimond Pacho (1794–1829), who visited the place three years after Scholz, gives us a full and reliable description of the castle as follows:

> Château sarrasin situé au bord de la mer, à six heures de distance du lieu précedent (Bordān). . . . En effet, le Kassr-Lamaïd est divisé en deux étages; il forme un grand carré, dont chaque côté est flanqué d'une tour également à angles droits;

[1] Dr. J. M. A. Scholz, *Travels in the Countries between Alexandria and Paraetonium*, London, 1822.

celle du sud donne entrée au château par une porte dont les montants et le linteau sont en grosses masses de granit rose.

Ainsi que les châteaux forts du moyen âge, celui de Lamaïd avait une seconde porte de clôture une immense dalle qu'on soulevait par les chaînes en fer, à travers une coulisse pratiquée au-dessus de l'entrée du château. Sur la façade étaient deux lions en ronde bosse posés sur une corniche ornée d'arabesques ; on n'en voit plus que les restes défigurés. Mais ce que rendent les ruines de Lamaïd interessantes pour l'histoire, c'est l'inscription suivante, sculptée en relief sur une frise en forme d'ogive, et ornée d'arabesques d'un travail très soigné.[1]

Monsieur Etienne Combe has kindly given me the correct translation of this inscription :

Au nom de Dieu, Clément et Miséricordieux ! A ordonné la construction de cette forteresse de bon augure, notre Maitre le Sultan très considérable, El Malik el Zahir, Souverain des Arabes (et des Persans), Souverain des nuques des nations, Rūkn el Dunya wa'l-Din, Abu 'l-Fath Baybars associé de l'émir des croyants, que Dieu fortifie ses décisions ! Par la main de l'esclave, avide (de Dieu et) digne de pardon, Ahmed el Tāhir el Yaghmuri.

Bayle St. John (1847), who was the next traveller to describe the castle of El Imayid, tells us that it stood near the beach amidst the white sand-hills ; " There was something so solitary and mysterious about it, as it reared its ruined form near the cease-

[1] J. R. Pacho, *Relation d'un Voyage dans la Marmarique, la Cyrénaïque, etc.*, Paris, 1827.

lessly rolling wave, with the stars looking through the shattered windows or between the broken battlements." He gives details of the building which agree with Pacho's description.

In 1873 the lighthouse was built close to the castle, and it has always been understood that the castle was knocked down for the stone to build the light-keeper's quarters, yet Robecchi-Bricchetti, who visited this place in 1885 while on his way to Siwa, alleges that the castle was still standing, and he describes the details of the building. This, and his rather poor plate of it, may have been copied from Pacho.[1] One who is a great admirer of such buildings is very sceptical of Bricchetti's veracity because none of the older Beduin remember the castle standing forty or fifty years ago.

Deep in the walls of the masonry quarters, therefore, are the inscription, decorations, and panthers rampant of the Sultan Baybars. A fragment of one of these latter was brought to Mr. Bramly at Borg el Arab and is now in the Alexandria Museum.

I think the red granite used by Ahmed el Tāhir el Yaghmuri in building the castle came from some ancient Egyptian building in the neighbourhood, perhaps from the site on the Shammama ridge where there are other blocks of this stone. Thus we see how this granite was used and reused.

Fourtau, I think wrongly, identified El Imayid

[1] Robecchi-Bricchetti, *All' Oasi di Giove Ammone*, Milano, 1890.

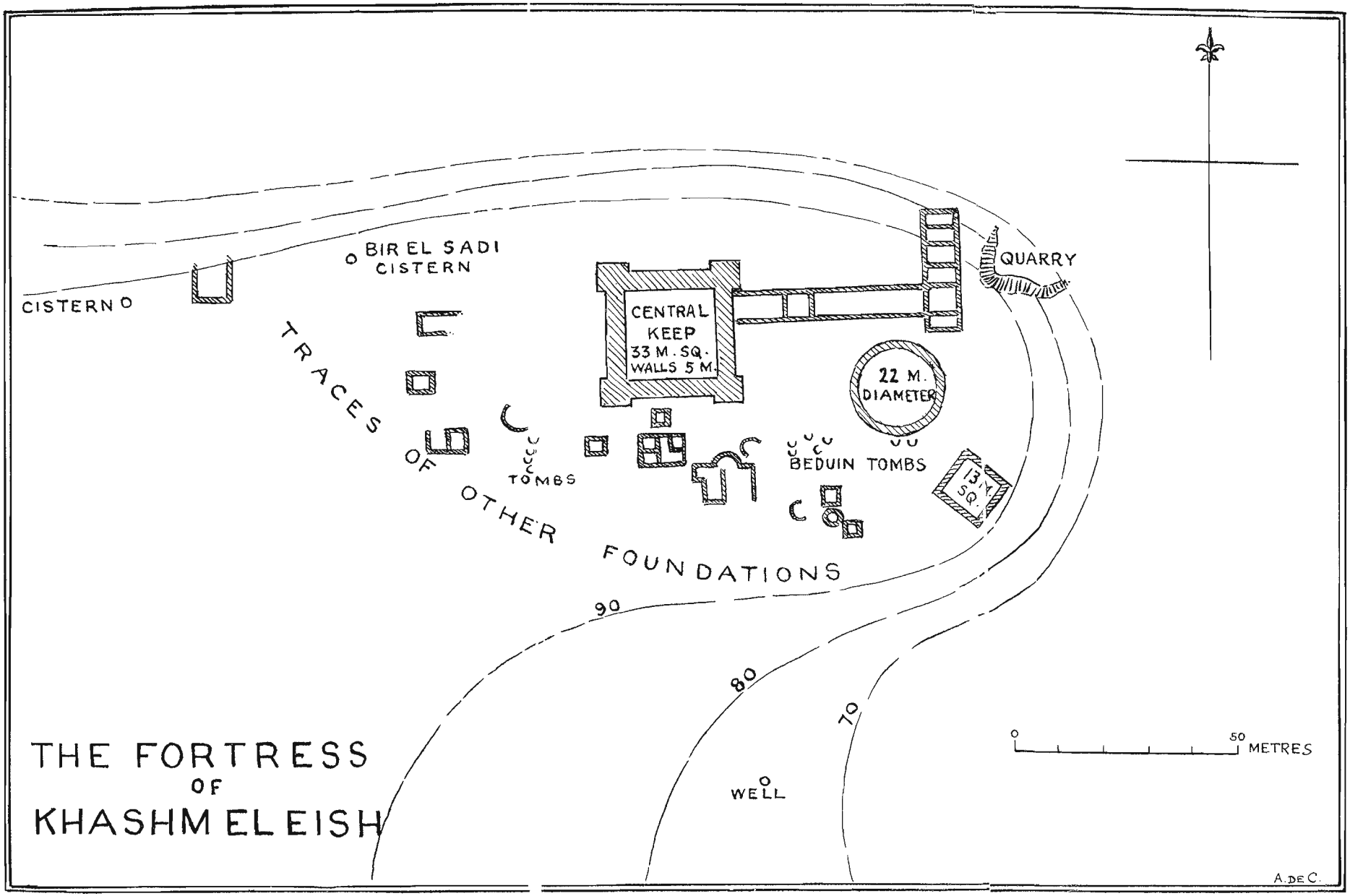
with Ptolemy's Glaucum, but as Glaucum was a promontory it is more likely to have been at Ras el Shaqiq or Ras Gibeisa. Perhaps El Imayid derives its name from Halmyra, an ancient town in Mareotis, but actually the word in Arabic means a small pole.

As for the lighthouse, it was erected by Ismail Pasha to please some foreign power which had had a ship wrecked on this coast. The light was extinguished in the Great War and has never been lit since, as the Arabs' Gulf is completely off any legitimate shipping route.

KHASHM EL EISH

About 9 kilometres due south of El Imayid lighthouse is the great headland of Khashm el Eish, " the Beginning of Plenty," so named because here, coming from the west on the old Darb el Haj, or Pilgrims' Way, one left the barren stony ground and entered the cultivated lands of the Maryut.

The traveller standing on the summit of this headland, 300 feet above the sea, will look down upon one of the most astonishing views in the Maryut ; westwards all is emptiness, but to the east are the houses of Hammam, the factory chimney of Gharbaniyat, and the buildings of Borg el Arab, all foreshortened into one big town. North-west is the Tower of Abu Sir, 40 kilometres away, and at night one sees the glare of the lights of Alexandria over 80



THE FORTRESS OF KHASHM EL EISH

kilometres off. Much else can be seen by one who lingers on this hill, for we are near the ancient frontier between Egypt and Libya.

I believe Monsignor Kaufmann thought that the summit of Khashm el Eish, which commands the whole district, was undoubtedly a citadel of ancient foundation, and was the "Key of Mareotis," and I would go further and suggest that here we have the "Mount of the Horns of the Earth," or "Beginning of Earth," according to Gardiner.

The massive foundations one sees to-day may be of a later date, but the central keep, which is about 33 metres square, with immensely thick walls, is worthy of the magnificent position it dominated. There are traces of other extensive foundations, and among them an isolated circular building of about 22 metres diameter, with walls 2 metres thick at the base. Much of the stone has been removed to cover Beduin graves, but the blocks of stone of the central keep measure $66 \times 38 \times 30$ centimetres. There are two ancient cisterns on the top of the hill, and several wells in the vicinity; the cistern called Bir el Saadi contains water throughout the year although much used.

I would suggest that in Græco-Roman times Khashm el Eish was one of the signal towers on the road to Cyrene, communicating with the Abu Sir tower on one side and with a tower on one of the *alams* near Alamein on the other. The plan I give

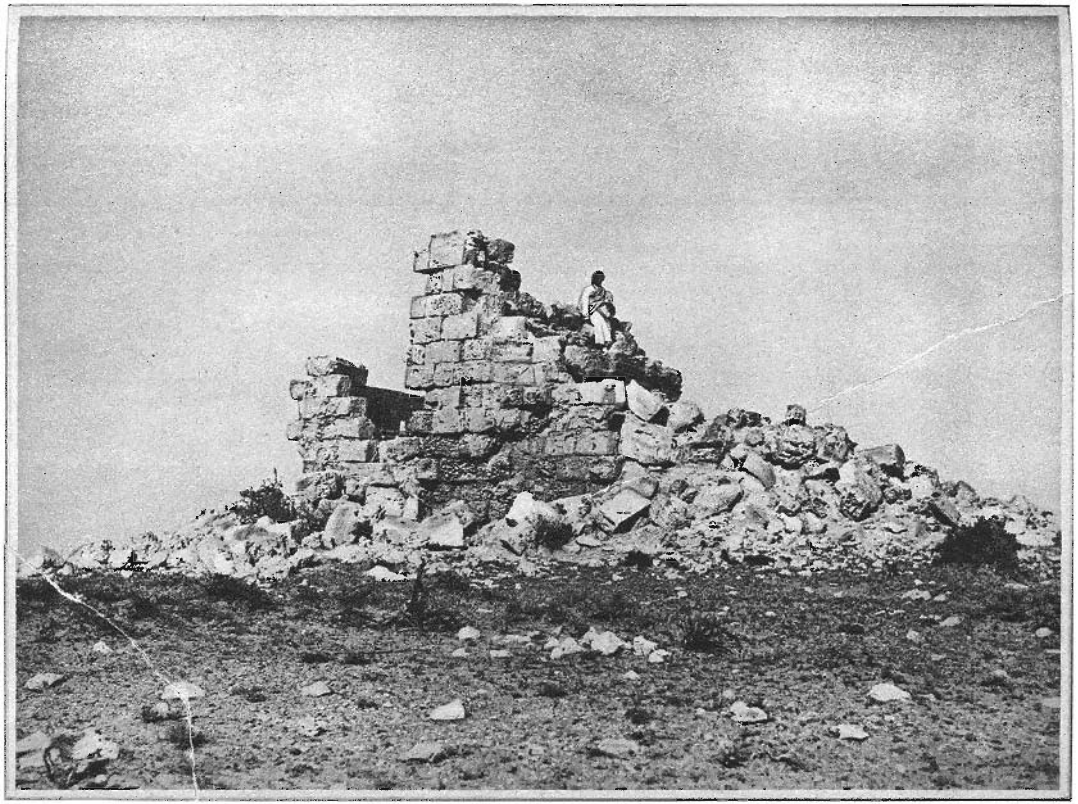
of the foundations on this hill is a very rough one, but it illustrates the interest of this little known site.

EL QASSABA EL SHARKIYA

This is "the Eastern Ruin." It is to be found about 10 kilometres due west of El Imayid station, and is to be identified with the Kassabah el Chammameh of Pacho. It is massively built, and may have been an outlying frontier post in Ptolemaic times. There are the remains of the foundations of a few other buildings, but it is a lonely little place. Pacho says: "J'y remarquai des détails architectoniques qui me firent vivement regretter sa grande destruction."

EL QASSABAT EL GHARBIYA

"The Western Ruins" are situated about 5 kilometres south of Alamein station, and can be identified with the Kasr Schamaa Garbye of Scholz and possibly with the Kassaba Zarghah of Pacho. The latter gives two plates of these qasabat—one, "el Baharieh," he calls "mausolée—sur un petit plateau calcaire éloigné de deux portées de fusil aux environs des bords de la mer." The other—"el Ghublieh"—"Quoique ce petit monument, qui servit comme le précédent de tombeau, en soit éloigné d'une heure vers le sud." This latter corresponds with the existing buildings, but the former, near the sea, has completely disappeared. The qasabat at Alamein are among the few remaining



QASSABA EL SHARKIYA

Photo : Dr. Maurer

buildings still standing in the Maryut. The larger of the two is about 5 metres square and 9 metres high. It is late Ptolemaic work, and would appear to be a tomb, massively built, with no entrance but three false doors carved in stone. There is a smaller and more ruined tomb near it, and possibly the foundations of a third. Round about this pleasant spot are signs of ancient habitations and at least two large underground cisterns well worth exploring. These buildings stand on the old military road made in 1916 to Gebel Hemeimat and " Escarpment Post " about 60 kilometres to the south. Farther west is " Ball's road," made about 1925, which leads to the Qattara Depression. Between the two are some wells called Qusūr el Atāsh, or " Castles of the Thirsty."

DERASIYA

A little to the north of Alamein station is Derasiya, an ancient town site, which I should like to identify with the Derrhis of Strabo on the analogy of Maryut and Mareotis, Abu Sir and Taposiris, Abomna and Abu Menas, and Bartun and Paraetonium. Pacho had the same idea, but rejected it ; I would reassert it on the following grounds : Strabo says the harbour of Derrhis was so named from an adjacent black rock resembling " derris," a hide, and the neighbouring place was Zephyrum, and then followed Leucaspis. There is still some rock

along the coast near Derasiya which has weathered black. It is crumbling away to-day and has been eroding for nearly two thousand years since Strabo described Derrhis. This black rock may have extended into the sea and provided greater shelter to the light-drought shipping of his day.

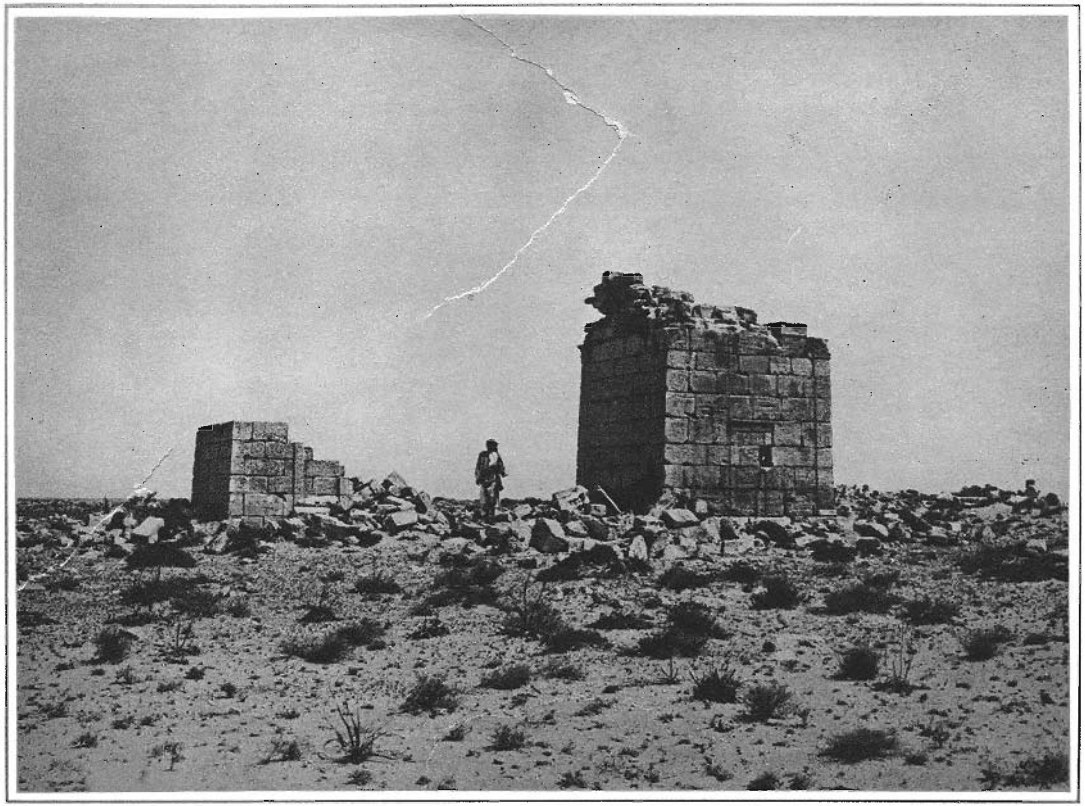
As regards Zephyrum, I understand this is usually identified with the headland and little bay at El Daba, but perhaps Zephyrum was at Sidi Abd' el Rahman, where, it is maintained, there was a harbour; and going eastwards after Derrhis followed Leucaspis which I shall describe later.

Writing of Derasiya in 1824, Pacho says :

> Dresièh, ruines d'une ancienne ville située à peu de distance de la mer . . . mais aucun édifice ancien ou moderne n'est encore debout. . . .
>
> Auprès de Dresièh est un lac d'eau salée, qui s'étend sur un espace de deux heures, en suivant les bords de la mer dont il n'est séparé que par une digue de sables . . .

The lake referred to is the western lagoon of El Bahrein, and beyond this one leaves the Maryut district.

The old maps mark "Drasia" and "Cape Deras," and the place is still known by the Bedouin and sailors as Derasiya, so it is unfortunate that the Survey Department entirely ignore the name. In this way time-honoured names and ancient sites become lost. Also the ex-Khedive Abbas Hilmi



QASSABAT EL GHARBIYA
PTOLEMAIC TOMBS

Photo : Dr. Maurer

did Derasiya injustice when he named his railway station Alamein (Two Hills).

LEUCASPIS

The foundations at Derasiya should not be confused with the great town site situated under the Alam el Milh, about 5 kilometres to the east, which I identify with Leucaspis. The "white shield" of Leucaspis may very well have been the long white sand-spit which is so remarkable a feature to-day, for, as one looks from the Alam across the purple waters of the lagoon, the pure white sand of the spit is most conspicuous against the peacock-green and blue of the gulf beyond.

The sea may have been connected with the lagoon by a permanent natural, or artificial, channel, so that the lagoon formed a harbour sheltered by the sand-spit. Even now, when the wind blows hard from the north-west, the sea washes across the spit into the lagoon in several places. Yet it would not have been difficult for the inhabitants of Leucaspis to keep a channel clear during the greater part of the year, so that a safe harbour behind the white shield was available. The lagoons are now shallow, but have been filled gradually with deposits washed in from the sea, and in ancient times they may have been very much deeper.

The foundations of the town are most extensive, occupying over a kilometre in length. There is at

least one plundered catacomb and other remains of interest. The numerous big pot-holes one sees mark the sites of the ancient cisterns which formerly existed under the houses.

EL HAMMAM

Returning westwards from this borderland, one passes Hammam, so-called by the Arabs on account of the ancient cistern or " bath " which existed here. The wells here were once important on the Darb el Haj or pilgrims' road from north Africa which turned south-eastwards from Hammam in the direction of the Wadi Natrun and Cairo. Now Hammam is an uninteresting little town where petrol, water, and other supplies can be obtained, and boasting such amenities as telegraph, telephone, and police, and a weekly market on Saturdays.

BOMONA

If one crosses the railway at Hammam one should reach the site Mahmud Pasha el Falaki called Bomoneh, but so far I have failed to locate it. He described the site as follows :

About 16 kilometres south-west of Abu Sir, 30 kilometres from the ruins of the town of Marea and about 43 kilometres from the ruins of the palace of the late Said Pasha (at Amriya), are some interesting remains, among which one can trace several streets and houses, the crumbling walls of which appear

well above the surrounding debris. These ruins, situated on the southern side of the hill chain which forms the third ridge of the Maryut, are known as Bomoneh. This name recalls that of the ancient town of Phomotis which must have occupied this site. . . . Bomoneh or Phomotis has many sakias, wells, and cisterns. . . .[1]

This was written in 1866, and since then Bomona has disappeared from the maps. It is possible that some readers of Mahmud Pasha el Falaki have confused Bomona with Abomna (Abu Mena), but the indications given by Mahmud Pasha dispose of this.

On some maps there is an interesting looking site marked " Sahel Sheah, ruined walls," about 5 kilometres due south of El Hammam and 21 kilometres south-west of Abu Sir. This place has been omitted from the large scale Sheet No. 88/42 for some reason. The Beduin state that there are other likely ruins 3 to 5 kilometres from the tomb of Sidi Abu el Kassār, and the whole of this country seems worth exploring.

EL GHARBANIYAT

If the reader turns aside from the main road about kilometre 43, opposite the gypsum factory at Gharbaniyat, he will find the earliest monument left to us in the Maryut. Here are traces of an ancient Egyptian mud-brick building, and the pieces of an

[1] Mahmud Pasha el Falaki, *Mémoire sur l'Antique Alexandrie, ses Faubourgs et Environs*, 1872.

immense granite column finely inscribed with the cartouche of Ramses II. (1292–1225 B.C.), and various figures including the effigy of the Pharaoh himself. Unfortunately the column is broken and has never been properly examined, described, or catalogued.

The inscription would seem to imply that this column was perhaps part of a fortress erected by Ramses II., that he might smite the army of the Libyans.

Monsignor Kaufmann suggested that the column was moved from Taposiris in the time of Justinian, but he gives no reason for this, and it seems more probable, taking into consideration the mud brick-work, that it formed part of a frontier post of Ramses II.

BORG EL ARAB

This picturesque modern village was named after its ancient neighbour, so well known to mariners and geographers from the sixteenth century onwards as Arabs' Tower, Tour des Arabes, or Torre delgi Arabi. The Hon. Mr. Francis Rodd in a recent book [1] has written :

In the years which succeeded the Great European War, Burj el Arab was born again through the enterprise of one who loved, and was loved by, the Bedawin of the Western Desert. Rebuilt by the care of a man who collected almost every stone himself,

[1] *General William Eaton, the Failure of an Idea*, by Francis Rennell Rodd. London, 1933.

BORG-EL-ARAB
BAB EL MALIK

Photo : Dr. Maurer

and utilised every piastre he could raise privately or from administrations in Egypt, Burj el Arab was to have become once more the centre where the people of the Western Desert could congregate to market, to have some slight contact with Alexandria, and to learn. It was designed to be the centre from which they could be administered when, of their own free will, they were sufficiently tame to meet the dread of civilisation face to face . . . it was again to become the Gateway of Egypt to the West.

Another well-known author, Mr. E. M. Forster, wrote of Borg el Arab that it was planned

with great taste, thanks mainly to the genius of the officer commanding, Wilfred Jennings-Bramly, M.C. The factory consists of a great cloister, and of two halls, one each side of the big tower. Fragments of antique sculpture and architecture have been cleverly introduced. . . . Farther to the west other buildings are rising, including a small walled town. It is all most interesting, and one of the few pieces of modern creative work to be seen. . . .

The town which the novelist saw rising in 1920 is slowly nearing completion. It is entirely in keeping with the landscape, and consists of an encircling wall with two gates, one, the Bab el Malik, being particularly fine. The court-house is a beautiful building. Fortunately the factory and other buildings are now in the safe keeping of the Ministry of Agriculture, which is planting the desert round about with fields of olives, vines, carobs, and other trees of commercial value.

BAHIG

Proceeding eastwards one comes to the pretty little village of Bahig, with its great artificial mounds, trees, and windmill. The road to the right by the police outpost leads to Abu Menas. A little farther a track leads over the ridge on the left and takes one down to lake level. Here will be found the long town site so clearly shown on Sheet 37 of the *Atlas Géographique* of the *Description de l'Égypte*, but omitted from modern maps. This town was built on an island close to the south shore. Many buildings can be traced, and at the eastern end the circular stone platform and oblong well of an ancient sakia will be found. Stone channels are traceable leading from this sakia to the cisterns of the town. To the south of this are the remains of two very interesting pottery kilns with a large heap of broken pottery thrown there as it was " scrapped " from them. North of the sakia there is a long jetty running into the lake from which ferry-boats once plied. It was not a causeway reaching to the northern shore as shown in the French map, but a jetty running down into the deep water. Quantities of small coins have been picked up from the crevices in the pavement of the jetty, and one can only suppose that they were dropped in the course of hundreds of years in handing small change to the watermen. These coins became exposed by the weathering and disintegration of the masonry.

MAREA OR MAREOTIS

When one views the formless heaps of stones which lie among the barley and the yellow daisies by the roadside near El Huwariya, it is almost impossible to realise that this was once the principal city of north-western Egypt—before Alexandria was thought of. Equally difficult is it to realise that once it was a fortified town whence Amasis went forth to become Pharaoh of Egypt, and that from here sailed [1] Inaros, the King of Marea, with his army to rid Egypt of the Persian oppressor.

When the enlightened astronomer of the Khedive Ismail, Mahmud Pasha el Falaki, identified this site nearly seventy years ago, he found the ruins to lie over an area of 1½ kilometres long by 800 metres wide. It is no wonder he wrote :

> The site of these ruins denotes an important strategical point : Julius Cæsar, in order to join the army of Mithridates, could do so by land only by circumventing Marea ; Amr was able to go from Fūstat to besiege Alexandria only by way of Marea ; and lastly Napoleon took practically the same route as Julius Cæsar to penetrate into the interior of Egypt with the French army : in a word, it is the key of Egypt on the African side just as Pelusium is the key on the Asiatic side. The valley of the lake is almost closed, its width is less than 1 kilometre and there are traces of ancient fortifications alongside it.

[1] See Thucydides, Book i. 104.

This does not seem to be an over-statement of fact, except so far as Napoleon is concerned. Elsewhere I have mentioned the defensive advantage of the Taenia, and how it was easy to bar the advance of an enemy coming from the west by this the only land road to Alexandria ; but before Alexandria was founded undoubtedly the best strategic position in the district was the town of Marea itself. Behind it was the easy line of communication by which reinforcements could come by water from any part of Egypt, and land forces could be sent from Marea to meet a Libyan incursion at any point. Hence it was probably the main garrison town in north-west Egypt in the time of the Pharaoh Apries and possibly earlier.

There are signs of an ancient advanced frontier post at Khashm el Eish, and somewhere on this frontier was the Fortress of the West in the thirteenth century B.C. ; and we know that both Ramses II. and Ramses III. were interested in it, for we find traces of Ramses II. as far west as El Gharbaniyat, and Ramses III. built a town near the Mount of the Horns of the Earth in this western country.

For thousands of years, from about 1220 B.C. down to A.D. 1915, Egypt has been frequently attacked from the west, and this is still the most likely side for an attack on her to be made.

Botti once wrote that there were two towns of

Marea, the ancient and the new, but whether both were on the same site is not clear.

The ancient town was the capital of an independent state in the fifth century B.C., and, as already pointed out, this kingdom of Marea included the whole of the country of the north-west Delta up to the banks of the Canopic Nile, and later when Alexandria was built and became prosperous, the town of Marea was still remarkably important according to Professor Breccia. It was the principal town of the nome and chief port on the south side of the lake. The region was renowned for its wine, its olive oil, and its papyrus, which played an important part in the life of those days.

Breccia [1] has written that by the second century of our era Marea had sunk to be a mere village ; but I find this hard to believe, because for another thirteen centuries at least Marea continued to exist. It was still important when Nicetas used it as a base for his operations in A.D. 602. It remained long the chief commercial depot of the nome ; one has only to see the lake port to realise this. It was when the lake began to recede from Marea that the trade of the place declined. Yet even as late as 1400 Maqrizi was able to write that Marea was a market of some importance to Alexandria. Quatremère [2] quotes an

[1] I think Breccia bases his assertion on the rather wild statements of Athenæus about Marea.

[2] E. Quatremère, *Mémoires Géographiques et Historiques sur l'Égypte*, Paris, 1811.

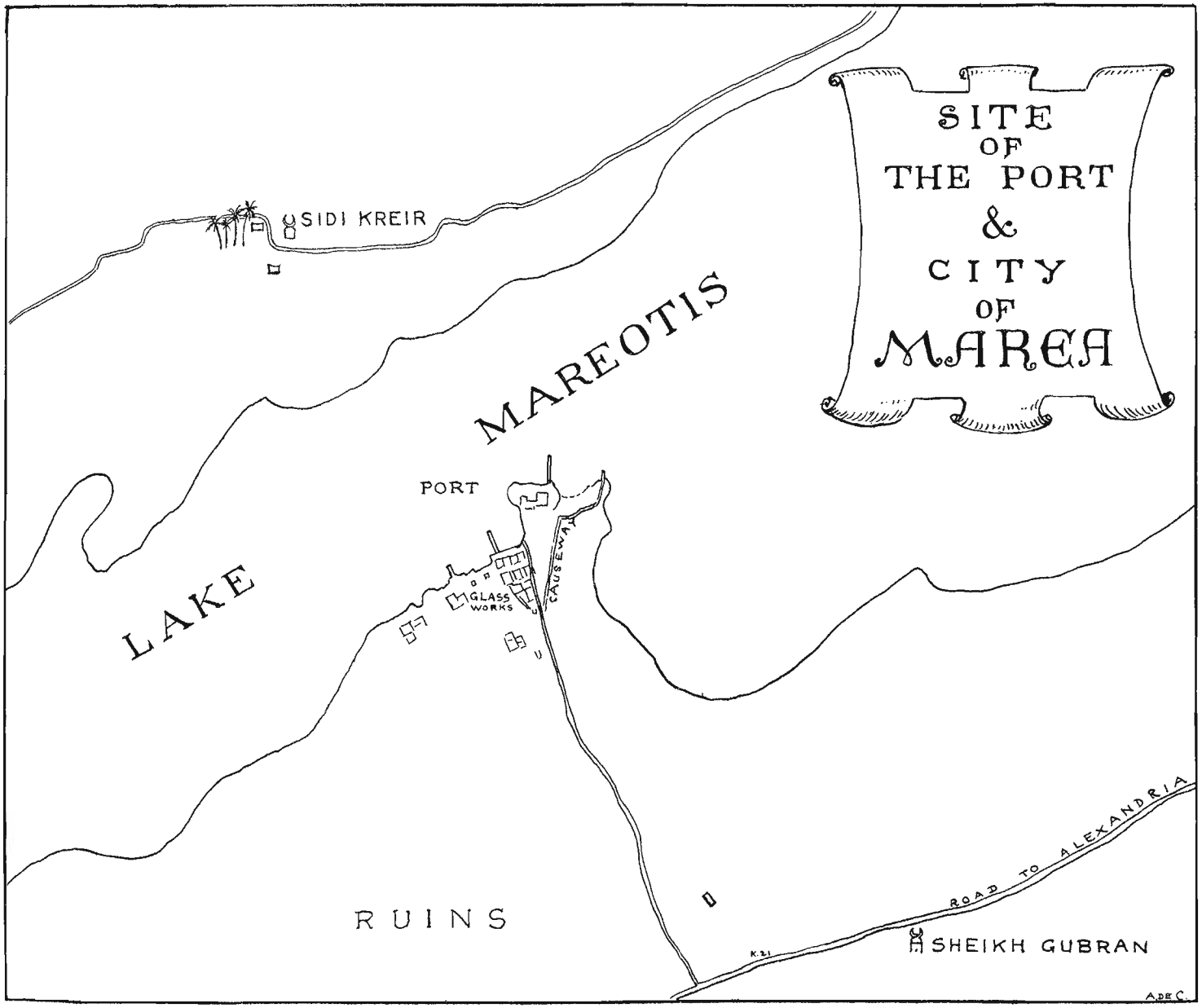
anonymous Arab geographer who speaks of Marea as "a large hamlet with numerous gardens, and produces a large quantity of fruit which is sent to Alexandria. The almonds cultivated there have such a thin skin that they can be broken between the two fingers easily."

But the end of the town of Mareotis could not have been far off, it had been raided more than once from the west, and must have been abandoned very soon after the Turkish conquest of Egypt in 1517, when Alexandria itself declined so much. The lake was gone, and Marea was deserted by its last lingering inhabitants who retired into Alexandria.

This, then, was the probable end of the ancient city which had existed for at least two thousand years, and, in the four hundred years that have followed, its buildings have utterly crumbled away.

. . . . . .

Yet the most interesting thing left to us of Marea is the lake harbour with the three fine jetties which run into the lake at right angles to the shore. The western jetty is 40 metres long and the other two are about 110 and 120 metres respectively. There are indications of a fourth jetty to the east, but it seems to me that the western one remains the most complete, and its height indicates that the rise and fall of Lake Mareotis was considerable. The top of these jetties may have been as much as 5 metres above the old lake bed, and 6 metres broad. The larger stone


SITE
OF
THE PORT
&
CITY
OF
MAREA
SIDI KREIR
MAREOTIS
PORT
CAUSEWAY
GLASS WORKS
LAKE
RUINS
ROAD TO ALEXANDRIA
K21
SHEIKH GUBRAN
A.DE C.

blocks measure 80×50×30 centimetres. There are traces of quays, and between the western and middle jetties are the sites of glass works. (See Appendix C.)

The whole site east, west, and south needs careful examination. There is much of interest, and my plan shows only the harbour. This drawing was compiled from the Survey maps, air photographs, and actual measurements on the ground.

ABU SEIF HASAN

Near kilometre 17 to the north of the main road, east of Marea, are the foundations of an interesting building. The blocks of stone are much larger than those usually employed in domestic buildings in the Maryut district, and they seem to indicate the site of a small temple. These remains stand on a high part of the Gebel Maryut ridge, and command a very fine view over the lake. Below, close to the shore of the ancient lake and to the east, are several very conspicuous red mounds which tell the tale of the existence of large pottery works formerly.

Abu Seif Hasan is near El Sirr, where there is an ancient site mentioned by Mahmud Pasha el Falaki.

ABU MENAS

The remains of the shrine of St. Menas, soldier and martyr, who was killed in A.D. 296, lies about 11 kilometres south-east of Bahig station.

The great church fell into ruin, and, together

with the pilgrim town round it, was lost under the driven sand of, perhaps, five centuries. Yet the name of St. Menas was handed down as Abomna—a traditional name only, it is true—by the wild Beduin to the day, early in 1905, when Mr. Ralph Carver identified it with Abu Menas.

Monsignor Kaufmann reaped the benefit of this discovery, and it is difficult to understand how Herr Falls could write so many pages about their wanderings in the desert in search of the shrine.

Years before, in 1824, Pacho, quite unknowing, had passed over the site on his way from Abu Sir to Qasr el Qatagi. His description of what he saw is interesting :

> Après cinq heures de marche, au sud-est, nous traversâmes les ruines d'un ancien bourg, nommé Boumnah, où, parmi des tas de pierres, je remarquai une construction ayant au fond une pièce cintrée ornée de deux colonnes. Ce monument que je crois romain, offre les mêmes détails que les nombreux *sirèh*, que l'on trouve si souvent et mieux conservés dans la Pentapole. . . .

Fortunately we have left to us a most valuable description of the church and town of St. Menas, written by El Bekri, an Arab traveller in A.D. 1086. His manuscript is in the Bibliothèque Nationale in Paris, and the translation was published by the Baron de Slane in *Le Journal Asiatique*, in 1858. This description has been quoted by Quatremère,

A. J. Butler, and Falls, but it has only been recently pointed out, by the late Mr. Evelyn White, that the first part of it refers to El Mūna and not to Abu Mena.

El Bekri, travelling from Tarrana to Barka, came first to El Mūna, where he found many abandoned buildings in the desert. Some of these buildings had been superb and well-built palaces, and there were still monks living there. Otherwise it was abandoned to the Arabs, who used the ruins to hide in while lying in wait to plunder travellers. There were springs of fresh water, though somewhat scanty. El Bekri proceeds :

From these one comes to Abu Mena, a great church which contains statues and sculptures of the greatest beauty. There lamps burn day and night without ceasing. At one end of the building is a vast marble tomb with two camels, and above them the statue of a man who is standing with one foot upon each camel ; one of his hands is open, the other closed.

This figure is said to represent St. Menas. On the right as you enter the church is a great marble column, in which a shrine is carved containing figures of Jesus, John, and Zacharias ; the gate of the shrine is kept closed. There is also to be seen a figure of the Blessed Virgin Mary hidden by two curtains, also figures of all the prophets. Outside the church are carvings representing all kinds of animals and men of all occupations. Among the rest is a slave-merchant holding in his hand an open purse. Over the centre of the church rises a dome ornamented with figures

said to represent angels. Close to the church is a mosque, with the *mirhāb* turned towards the south, where the Musulmen pray.

All the land round about is planted with fruit trees which yield excellent fruit that is made into syrup ; there are also many vines which are grown to make wine. The town of Fustat sends every year 1000 *dinars* (£500) for the maintenance of this church.

In this countryside, celebrated as it was for " The Fathers of the Desert "—the holy men described by Cassian, Palladius, and St. Jerome—it is, perhaps, disappointing that there are no traces left to us of any local saint of the district of Mareotis—St. Amoun, for example. It is true that outside the Maryut at Scetis (the Wadi el Natrun) we have the monasteries of St. Macarius, St. Bishoi, and others associated with that district.

Not himself of the desert, St. Menas was a young Christian Egyptian officer martyred for his Faith by Diocletian while on foreign service in Asia Minor.[1] He was tortured, beheaded, and his body was burnt, but his co-religionists collected the ashes and carried them to Egypt when part of the army serving in Phrygia was transferred to Cyrenaica. The road from Egypt lay through the Maryut, and on the way the camel bearing the remains stopped near a spring of water and refused to move farther. So the faithful

[1] There is a beautiful early pyx in the British Museum showing the Trial, Execution, and Triumph of St. Menas.

THE MARTYRDOM OF ST. MENAS *By courtesy of the British Museum Authorities*

FROM A SIXTH CENTURY IVORY PYX IN THE BRITISH MUSEUM, PROBABLY MADE IN EGYPT

comrades of St. Menas buried the shrine containing the ashes at this spot, and passed on to rejoin the army on the march through Mareotis to Cyrenaica.

Years afterwards a shepherd, tending his flock, noticed that a sick lamb that crossed the saint's grave became well. He tried successfully with another lamb. Then a sick lady of high rank was healed, and from that time the fame of St. Menas grew, and a church was built over the grave about A.D. 350.

As the number of pilgrims became so great the Emperor Arcadius (395–408) added a large and splendid basilica to the eastern portion of the original building.

The shrine enjoyed great fame in the fifth and sixth centuries. Pilgrims from all round the Mediterranean came to visit it and to be cured of their ills by " the beautiful water of St. Menas that drives away all pain." A town was built round the great church, and the beauty of it must have been enhanced by the groves of fruit trees that grew there.

Churches dedicated to St. Menas were erected elsewhere—even in Rome, on the Via Ostia between the gate and the basilica of San Paulo. This was built in 589 by an Alexandrian corporation.

The great church of Arcadius in Mareotis must have been an extremely rich building of marble and porphyry embellished with mosaics, frescoes, and sculpture. Perhaps the marble came from the

Greek islands and the porphyry from Gebel Dokhan, in which case it is interesting to remember how laboriously this stone was pushed down on rollers, perhaps 4000 feet, from the quarries to the Red Sea, whence it was shipped by water by way of the Gulf of Suez, Trajan's canal, the Nile, and Lake Mareotis, to the nearest point to St. Menas, probably the quays at Marea, from where it could be carried or rolled to the church.

Kaufmann, the excavator of the place, reckoned the space covered by the churches and other religious buildings occupied more than 40,000 square metres. He removed many of the beautiful marble capitals and other sculptures to Frankfort-on-Main, and Falls, while complaining that the early Arab rulers of Egypt pillaged the church, admits that a hundred cases of marbles and other things were dispatched to Germany. A few of the antiques are in the Alexandria Museum and little is left *in situ*, and the Société Royale d'Archéologie is seriously thinking of protecting what remains.

Professor Breccia [1] says :

The basilica proper has a length of 60 metres, and a width of 26 m. 50. The transept has a length of 50 metres. The total length of the group of sacred buildings, comprising the basilica, the earlier church over the Saint's tomb, and the baptistery, is

[1] *Alexandrea ad Ægyptum*, Bergamo, 1922 ; see also Kaufmann, *La Découverte des Sanctuaries de Ménas*, Alexandria, 1908, and his various works in German.

as much as 120 metres. The basilica had three naves. The roof was supported by 56 marble columns surmounted by beautiful capitals of acanthus leaves.

The walls were covered with marble slabs. The apse was built of large rectangular limestone blocks. . . . In front of the apse stand the *sub sellia* and the *cathedra*. The latter is placed in the middle of the eastern wall of an almost square enclosure, shut off by a fence. The altar stands in the centre of this enclosure, which also contained the presbytery and the *schola cantorum*.

The sepulchre of St. Menas was in a subterranean chamber hewn in the rock. This has been desecrated, and the great bas-relief of the Saint standing between two kneeling camels has gone.

We may surmise that the church was abandoned and fell into ruins by the thirteenth century. Raids from the west, increasing lawlessness of the Beduin, and systematic spoliation, caused the end. The ruins above ground gradually fell owing to wind and sand action, earthquake, heat, and rain, until nothing but a heap of stones and the name Abomna was left.

QASR EL QATĀGI

Thirty-five kilometres due south of Abu Menas lies the ruin called the Qasr of Qatāgi. This was the Kassr Ghettadjiah of Pacho who wrote of it, in 1824 :

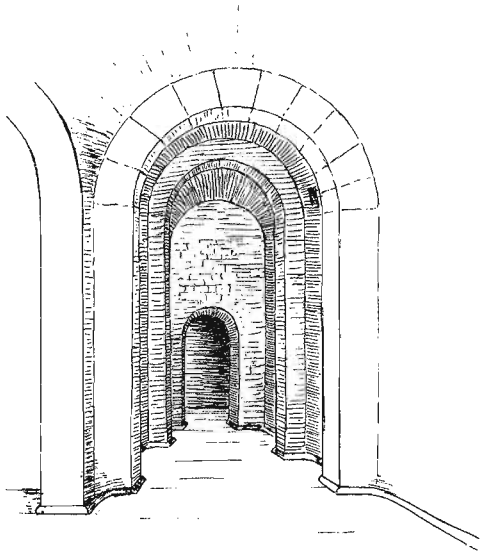
Situé à dix heures au sud de Boumnah, répond mal à la description pompeuse que les Arabes m'en avaient faite. C'est une petite mosquée isolée dans

les sables, et construite avec les débris d'un ancien monument. Deux colonnes, l'une de porphyre bleu, l'autre de granit rose, sont renversées au milieu de son enceinte. Au dehors on voit aussi d'autres tronçons de colonnes, mais calcaires ; et à quelque distance de la mosquée on aperçoit les traces d'un village arabe avec des restes de voûtes en ogive.

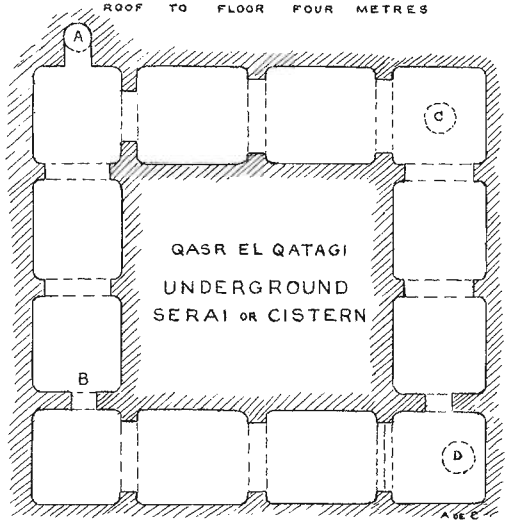
It was not until 1905 that Kaufmann and Falls cleared and photographed it, but they removed the marble capitals and bases which had belonged to the two columns. These columns, by the way, are red and black granite, and I suggest that they stood originally on the low wall which separated the little nave from the sanctuary of the chapel. They would have supported a triple arch, which, in its turn, had the groined roof above it—there are traces of this groining. When the roof collapsed, the columns fell inside the building, as is clear from the evidence of Pacho and the photograph of Falls.

At the time this chapel was building these columns must have been carried or dragged from some more ancient building far to the north or the east. I would suggest that it was built in the fourth or fifth century as a place of worship on the ancient Christian pilgrim route which ran south from Alexandria through St. Menas and then south-east by the hermitage at Khashm el Qaud to the monasteries and churches of Scetis.

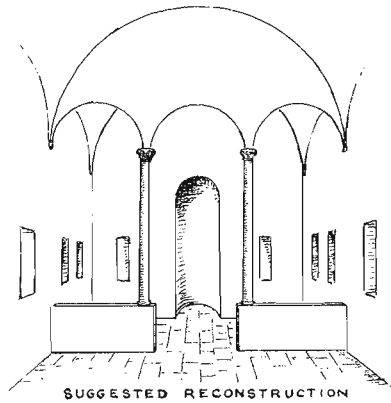
This little wayside chapel faces north-east, which confirms that it was not a mosque, as Captain Creswell



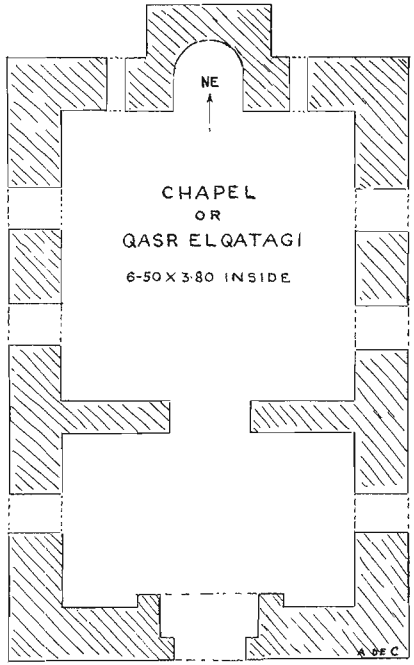
VIEW THROUGH FROM A TO B
ROOF TO FLOOR FOUR METRES



A = WELL WITH STEPS CUT IN SIDES
C AND D = CIRCULAR HOLES IN ROOF



SUGGESTED RECONSTRUCTION



ONE OF THE COLUMNS REMAINS AND A FRAGMENT OF THE SECOND THE MARBLE CAPITALS WERE REMOVED BY KAUFMANN

tells me he knows of no example of deliberate disregard of the true direction of Mecca in the building of mosques. However, it is somewhat extraordinary that Amélineau omitted this place from his monumental work on *La Géographie de l'Égypte à l'Époque Copte* (Paris, 1893), as he must have read Pacho, but no doubt he was put off the scent by Pacho calling the place a mosque.

The chapel is only 6½ metres long by 3·80 wide, but the walls are 70 centimetres thick. The photograph shows the building as it was before it was restored in April 1934 by H.H. Prince Omar Toussun, who has also cleared out the so-called cistern which lies a few hundred metres to the north. The floor of this elaborate underground vaulted building is 4 metres below the present ground level, and the means of access was down a shaft or well with step holes cut in the sides. There was an exactly similar means of access to the little underground monastery at Khashm el Qaud. This, together with the fact that the walls of this underground building at Qasr el Qatāgi are covered with a thick plaster painted red, inclines one to the conclusion that it was not a cistern but a resting-place, or serai, for the pilgrims. Furthermore, there are no signs of water-marks on the walls, and the water supply was more probably contained in the large open cistern nearby, which measures nearly 30 metres square and is 2½ metres deep.

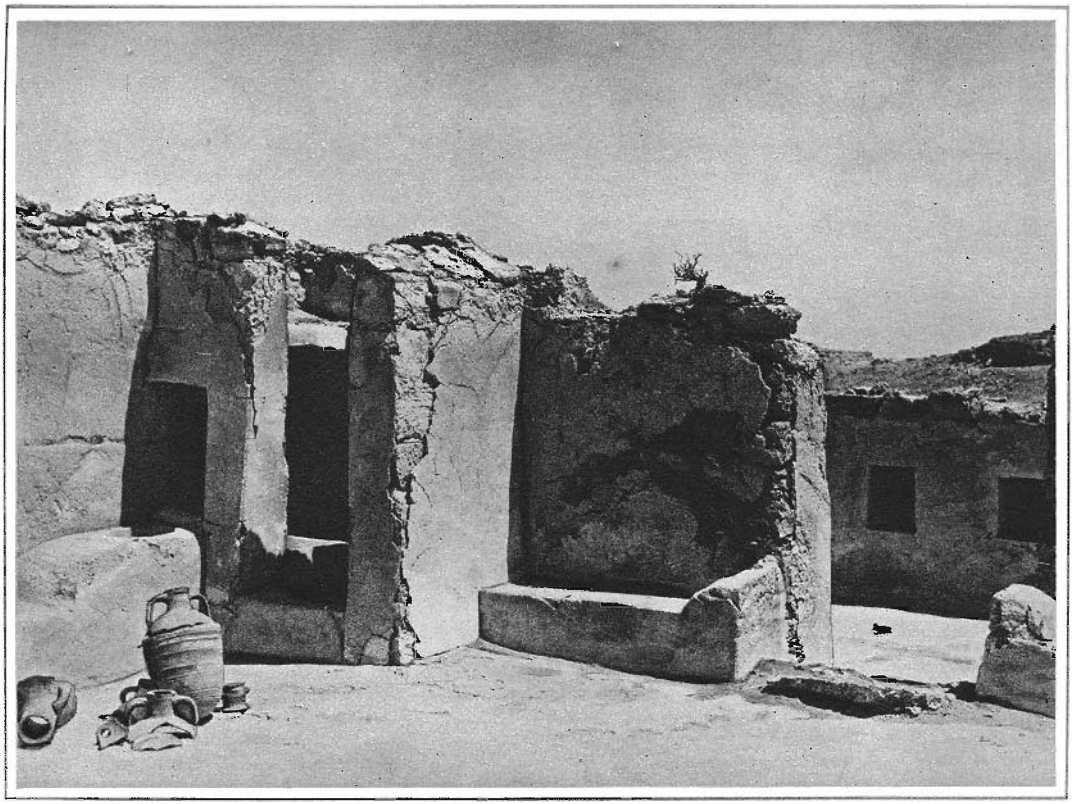
Prior to 1932 Qasr el Qatāgi was omitted from the Survey maps and was consequently seldom visited. The Borg el Arab–Bahariya road, made about 1922, passes a few kilometres west of it, and since then H.H. Prince Omar has made a road from Alam Shaltūt, 32 kilometres long, direct to the Qasr.

KHASHM EL QAUD

Deeper in the desert at the escarpment edge is Gebel Khashm el Qaud, below which are the recently excavated cells of the desert hermits of old. This place is usually approached from kilometre 159 on the Cairo–Natrun–Amria road, and it is situated 22 kilometres south-west of that point, in a most arid and pitiless spot. H.H. Prince Omar excavated the central monastic building and the two cisterns.

The photograph shows what the admirable excavation work of H.H. Prince Omar Toussun has exposed ; this is the central monastery consisting of seven or eight small rooms and the kitchen, etc. There are also numerous very primitive and isolated cells in the immediate neighbourhood, and the two cisterns cut in the rock. From this most interesting group of remains we can obtain some idea of the austere life of these early Christian monks.

When this isolated group of cells was discovered it was thought that the site might be identified with



THE MONASTERY AT KHASHM EL QAUD
EXCAVATED IN 1932 BY H.H. PRINCE OMAR TOUSSUN

Photo : Dr. H. Maurer

Cellia, but the publication of Mr. Evelyn White's great work on these monasteries [1] has definitely proved this identification to be impossible. Probably we have at Khashm el Qaud one of the many groups of cells dependent on the monasteries of Scetis or Wadi el Natrun, possibly Bijebij or Petra—founded perhaps in the fourth century, it may have been abandoned as early as the seventh century when the Wadi el Natrun monasteries were sacked.

AMRIYA

Known in the past as El Gheit or El Qarrah, and renamed Bringi Maryut by the Viceroy Said Pasha, who had a small palace or hunting-box here, the name was altered to Amriya by the Khedive Abbas Hilmi. It is now the headquarters of the eastern district of the Western Desert Province.

Mahmud Pasha el Falaki describes the ancient site he found here nearly seventy years ago, telling us that the ancient town must have been 600 metres long by about 500 metres wide, and containing wells and cisterns ; he says :

> Nous y avons découvert, vers l'ouest, les restes de plus d'une douzaine d'usines pour faire du vin ; elles se composent généralement de deux ou trois grands bassins de différents niveaux ; ils sont couverts par une couche épaisse de ciment bien conservé et communiquent entr'eux par de petits conduits en maçonnerie à ciel ouvert. . . . Les fours qu'on y

[1] *The Monasteries of Nitria and of Scetis*, New York, 1932.

remarque démontrent que le vin Maréotique était, au moins en partie, du vin cuit.

It was in this little village of Amriya that Nina Baird met with the illness that caused her untimely death in 1919. When the half-starved Beduin refugees came over from the Senussi in 1916 it was alarmingly evident to the officer in charge of the district that some form of paid work should be given to supplement the scanty money the Beduin had remaining among them. Obviously the making of rugs for sale in Alexandria and elsewhere, if properly organised, would meet the situation. Miss Baird immediately volunteered to do the organisation and manage the manufacture; and she was suited for the work, as she possessed all the high qualities needed, and she already had friends among the Beduin in the neighbourhood of her father's Egyptian home. The sale of these carpets was sufficiently successful to provide money for the Beduin to restart their herds and sow their barley once more, and although Nina Baird has been dead fifteen years, one hopes that her unselfish labour has not been entirely forgotten.

EL KURUM EL TUWAL

The ruins at this place are situated about 12 kilometres south-east of Amriya, close to the Gianaclis road. They were excavated in 1930 by the German Institute of Cairo, and the results are fully described

in pages 106–129 of *Mitteilungen des Deutschen Instituts für Ägyptische Altertumskunde in Kairo*, vol. i. part ii. (Augsburg, 1930).

Built in the wall round the tomb of a Beduin Sheikh (Abu Deraa) were found several antique remains belonging probably to a Ptolemaic temple. Two of the stones had part of a hieroglyphic inscription inscribed on them. There were also columns and capitals, and pottery and glass fragments of good quality were excavated.

The excavations in the Kom revealed two rooms, the eastern or larger room measuring $13\frac{1}{2} \times 10\frac{1}{2}$ metres and the smaller $10\frac{1}{2} \times 3\frac{1}{2}$ metres. The excavators thought that the general planning suggested a church.

The fact remains that this is one more example of the curious planning of ancient buildings in the Maryut district which is so mystifying, and which has yet to be studied and explained. The site also proves how any of the numerous Koms in this district, and in the Western Beheira, may yield much information if systematically and carefully examined by experts.

KARM ABU GIRG

Hidden away in the Municipal Reports for the year 1912, in Professor Breccia's *Rapport sur la marche du Service du Musée*, will be found a full description of the discovery of a most interesting early Christian building, of the fifth or sixth century, at Karm Abu Girg, or Abu Girgis.

This place is clearly marked on the 1 : 100,000 Sheet No. 88/48, about 19 kilometres south-east of Amriya and 3 kilometres west of the tail of the Nubariya canal. Attached to the Report are some excellent reproductions in colour of the really beautiful paintings removed from the walls of this building to the safe keeping of the Alexandria Museum. One of these frescoes is the earliest known representation of the Annunciation of the Blessed Virgin, and is very rich in colour. Another representing an unknown saint, shows in its background the last influences of ancient Egyptian art. There is an unusual fineness of drawing in all these paintings.

Below the main building was a small crypt of exactly the same plan as the chapel at Qasr el Qatāgi. This church faces due east, but the planning of the walls is inexplicable, and a good deal of change has taken place since Breccia excavated the building twenty-two years ago.

Not far away was found a portion of a red granite obelisk inscribed with the cartouche of Ramses II. Breccia mentions other stones, much cut down but probably of the same period, so here we have traces of an earlier building (as at El Gharbaniyat), dating from over three thousand years ago. This stone still lies there, but now almost buried again.

One can get to Karm Abu Girg by the Gianaclis road, which branches from the main desert route to

KARM ABU GIRG

Photo : Dr. Maurer

Cairo at the old Amriya aerodrome. Running down this almost straight road for 14 kilometres brings one to this interesting site.

KOM EL RIYASHAT

The country lying on the very edge of the cultivation is worth visiting, as there is much of interest in the neighbourhood. Kom el Riyāshāt has always been a conspicuous landmark. On Sheet 37 of the Atlas published with the *Description de l'Égypte* it is marked as El Rachat, and all the old routes seem to lead to it. Professor Breccia excavated four marble columns, 2·40 long by 30 cms. diameter, from this kom, and it is now crowned by the tomb of Sidi Omar. Some of the tombs have ancient marble columns as headstones. Perhaps somewhere near here was the ancient town of Dafashīr, for close to Riyāshāt are the traces of the ancient Asara canal, now called El Awiri—perhaps the "western river" of the ancient Egyptians, the Lycus River of the Romans, the "Alexandria branch" of the Nile of Ibn Sirapiūn, and the Pidrakon of John of Nikiou.

GISR EL TOD

Not far from Kom el Riyashat is the Gisr el Tod, that strange embankment which runs from this spot for nearly 12 kilometres in the direction of Abu el Matāmir. Mr. H. T. Ferrar, M.A., F.G.S., described this earthwork in the *Cairo Scientific Journal*,

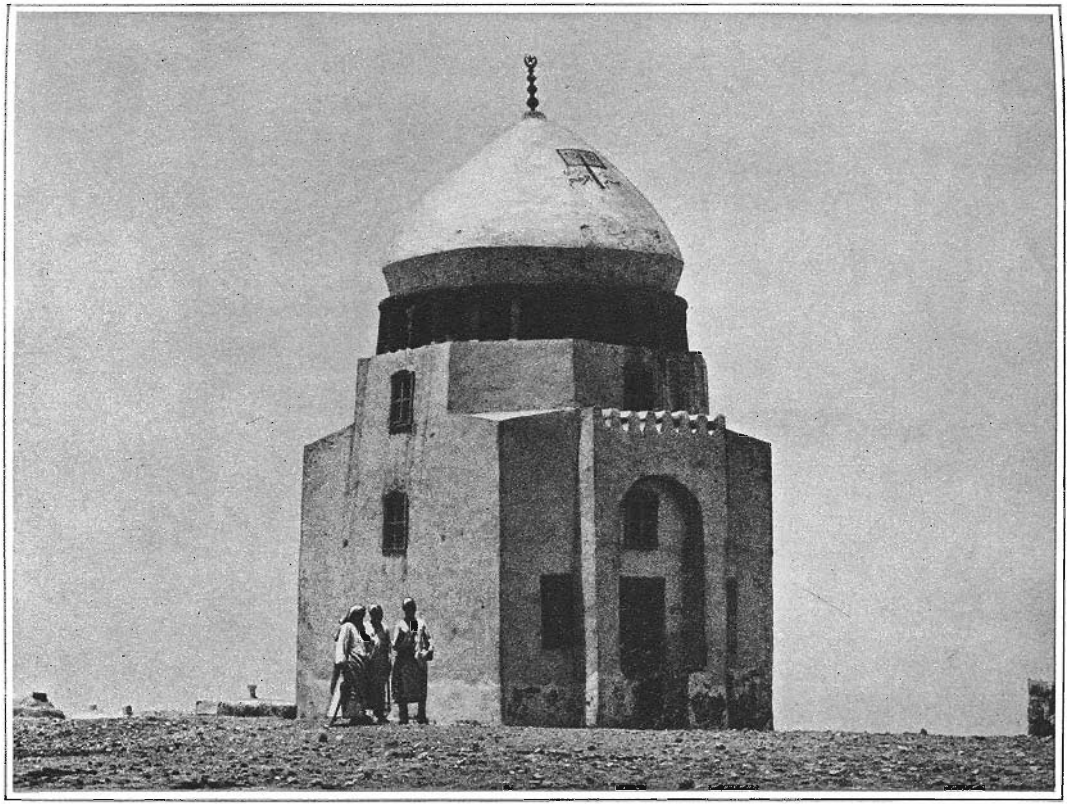
vol. viii. No. 94, in 1914, but could not exactly explain its purpose. Its height is usually 5 or 6 metres, and it is from 15 to 20 metres broad at its base.

The bank cannot mark the trace of an ancient canal, for it is single and continuous: nor can it have been an ancient basin-bank, for it does not follow the contours of the country, and there are no alluvial deposits on its higher side, where such deposits would certainly accumulate had it exercised such a function. The eastern end of this bank rests on the left bank of an ancient Nile branch (*sic*), now known as the Bahr Awiri but called Rayah de Beheira on Napoleon's Map of the Delta.[1] Its western end appears to be involved in the fortifications of the monasteries (*sic*) and vineyards (kurūm) of the eastern Maryut.

Mr. Ferrar suggested the Gisr el Tod was an earthwork or fortification joining strategic points to protect the inhabitants of the Delta from Libyan inroads, and I think that this is the probable explanation of this interesting work.

It might even have been connected with the fortifications erected by Ramses II., as a fragment of granite with his cartouche lies only a few kilometres away from the western end of the earthwork, and may have been moved to Karm Abu Girg when the church of St. George was built there in the fourth century.

[1] This is Feuille No. 37, and I have written fully about this canal elsewhere.



EL RIYASHAT
TOMB OF SIDI OMAR

Photo : Dr. Maurer

The motorist can return to Alexandria by way of Kom el Hanash and Kafr el Dawar, across the bottom of ancient Lake Mareotis.

KOM TURŪGA

This place is shown north of Abu el Matāmir on the 1 : 100,000 Sheet No. 88/48. It is difficult to realise that it was once a lake port of ancient Mareotis.

When the Patriarch Benjamin journeyed from Alexandria to the Wadi el Natrun to consecrate the church of St. Macarius, he seems to have come by boat to Turūga. It was a town of some importance and was on an old lake and canal route to Cairo, and was situated at the mouth of the important commercial canal which took off the Canopic Nile near Naukratis. One landed here to go to El Mūna (Cellia) and the Wadi el Natrun.

Turūga continued in history for some time, and was reduced by Muzahim-ibn-Khakem in 867, and the army of the Fatimīd El Mu-izz halted at Turūga on its way to Fūstat in 969. The Sultan Baybars stayed here on his way to Alexandria in 1262–63, and again in 1264 after he visited the Wadi el Natrun monasteries.

EL BARNŪGI AND CELLIA

Elsewhere it is shown that the site of the celebrated early Christian monastic settlement of the Mount of Nitria (Coptic, Pernoudj) was situated on and round about the hill and present-day village of El

Barnūgi. Prior to the publication of Mr. Evelyn White's *Monasteries of Nitria and of Scetis* in 1932, few people would have agreed that the Mount of Nitria was anywhere but in the Wadi el Natrun, but now we have conclusive proof that the Wadi el Natrun monasteries were anciently known as Scetis, and that Nitria was many miles away, near the south-east shore of Lake Mareotis.

Through the kindness of Lieut.-Colonel J. Marryat, R.E., D.S.O., Mr. R. Asser, of the Delta Light Railways at Damanhur, has visited El Barnūgi, which is about 10 kilometres from Hosh Isa, and he reports :

I have visited the " ruins " at Kom Barnūgi, but was unable to find out anything about them.

There was obviously some kind of building here, but impossible to indicate what was its original shape. There are blocks of stone about 1½ metre × 1 metre × 40 cms., all very accurately cut and, in some cases, joined by means of tongue-grooves. These stones lie on a small mound at the back of the village proper, which is also built on a high mound.

The building, whatever it was, is obviously of great age and the natives call it Kom el Keferi. The place has been upset at some time or other, as a good many of the stones are out of place. It is impossible to say how far down the foundations go. . . .

Possibly some of the fourth-century remains exist under the present village, which is itself old. It is mentioned in a revenue list dated A.D. 1376 as a place of 658 feddans, and was rated at 2200 dinars.

Sixteen or nineteen kilometres south-west (or possibly W.S.W.) of the Mount of Nitria (El Barnūgi) lay the desert monastic settlement of Cellia. It was very possible that this place was known by the early Arabs as El Mūna.[1] The exact site is still to be identified, but I would search for it near the Nubariya Canal south and south-west of Hosh Isa.

MOGHARA

Moghara salt lake is situated at the south-west extremity of the Maryut district. Sir Henry Lyons, F.R.S., has written that the fluvio-marine deposits of Moghara and the silicified wood of the same district belong to Miocene times. The lake is 34 metres, and the Wadi el Natrun 23 metres, below sea-level, but they could never have been connected with each other, as there is a mass of high desert rising over 100 metres above the sea, between them. "We can be absolutely certain," Dr. Ball has written, "that neither the Nile nor any branch of it ever passed through the Libyan Desert to the sea." [2]

The oasis of Moghara is bordered on the north by gravelly slopes much scored with water-courses leading down from the escarpment. The Masrab Mahashas from Qara to the Wadi el Natrun passes east and west through it, and on the south are the sand dunes. The *sabbaka* is well covered with vege-

[1] See White, *op. cit.* pp. 25, 26.

[2] "Problems of the Libyan Desert," in *The Geographical Journal*, vol. lxx. No. 1, July 1927, p. 32.

tation, and there are a few stunted palm trees. The water is poor in quality and an extremely voracious type of mosquito breeds there.

MINQAR ABU DWEIS.

About 40 kilometres west of Moghara, at the terminus of Ball's road from Alamein, is one of the high points of the great Libyan escarpment overlooking the Qattara Depression. Minqar Abu Dweis, or Minqar Lebbūk as it was known for over a hundred years, is 228 metres above the sea and nearly 300 metres above the plain below. The road from Alamein, which is about 65 kilometres long, follows the line of borings made by the Survey Department a few years ago. On page 310 of Dr. Ball's most interesting article in *The Geographical Journal* for October 1933, there is a plate showing the geological section along this road.

I must be forgiven for leaving the Maryut district to quote a short passage from Dr. Ball's article about this celebrated Depression which has an area of 19,500 square kilometres, and an average depth below sea-level of 60 metres, and at its lowest point is 134 metres below the sea.

The depression is believed to have been mainly formed in Pleistocene and recent geological times by the excavating action of the wind on the nearly horizontally bedded soft rocks which constitute the Miocene formation in this part of Egypt, and which

are well exposed in the face of the great escarpment bounding the depression on the north. Large quantities of the sandy constituents of the rocks removed by wind-action in the process of formation of the depression have been blown south-south-eastwards and deposited in the form of great lines of sand-dunes, some of which are to be seen in the most southerly part of the depression itself, while others stretch for long distances over the desert beyond it.[1]

My list of places of interest and ancient sites in the Maryut district is by no means complete. I have not mentioned in detail the village and tomb of Sidi Ali Mirghib, or Abd el Qadir, or the site called El Medina, which lies between these two places. Mahmud Pasha el Falaki found that the foundations at El Medina covered an area 1 kilometre long by 400 metres wide. He mentions also a place called El Kariah, which would seem to be in the neighbourhood of Ikingi Maryut, where seventy years ago he found ancient wine and oil presses.

There are many other remains of this sort elsewhere—near Bir Fiteiha, for example, and on the islands in the lake. Then there are the numerous *koms* in the eastern part of the district, of which Professor Breccia wrote : " D'ailleurs dans presque tous les koms du Maryut il est aisé de rencontrer

[1] " The Qattara Depression of the Libyan Desert and the Possibility of its Utilization for Power-Production," by Dr. John Ball in *The Geographical Journal*, vol. lxxxii. No. 4, 1933.

des traces plus ou moins remarquables du Christianisme." A good example of this is Alam Shaltūt, excavated by H.H. Prince Omar Toussun, and the interesting wall paintings discovered on the walls of this ancient abode were removed for safety to the Alexandria Museum.

It seems to me urgent and necessary that the more important sites, the wine presses, the oil presses, the potters' kilns, the glass furnaces, and so on, should be measured and recorded on plans before they disappear completely. Amateur archæologists can help in this way, so long as nothing is destroyed, and any new site of interest which may be discovered should be reported to the keeper of the Alexandria Museum or to the Société Royale d'Archéologie d'Alexandrie.

The Maryut lake and district await a similar careful examination to that made of the region round Lake Qarūn by Miss Caton-Thompson and Miss Gardner. Some day we may expect the volume dealing with the north-west Delta by Dr. K. S. Sandford and Mr. W. J. Arkell. These gentlemen are engaged in a prehistoric survey of Egypt in the Nile basin, from the first cataract to the shores of the Mediterranean. The results of field work by such experts will solve many of the problems of the Maryut district.

XVIII

Old Caravan Routes

IT has always seemed to me that the old caravan routes of the Libyan Desert would be a fascinating subject for study. These tracks are fast going out of use and being lost—their day is past—yet for hundreds of years they were used by caravans carrying produce between Egypt, Tunis, Fezzan, and Wadai.

One of the greatest of the ancient caravan routes was the Darb el Haj, which ran about 1600 miles between Algeria and Mecca. According to the old maps this pilgrims' way entered the Maryut on the west near the well of Qusūr el Atāsh (The Castles of the Thirsty), and passed by the qassabas (el Gharbiya and el Sharkiya), and under the bluff of Khashm el Eish to the wells of El Hammam. From there the route seems to have bifurcated-east to Abu Menas and Tarrana and south-south-east to Sidi Abd el Ati, and perhaps Qasr el Qatāgi, through the Wadi Natrun to Cairo.

From Cairo the pilgrims journeyed by Kolzum (Suez), Akaba, and El Medina to El Mecca. It is

wonderful to think of the great faith which carried these pilgrims from far-off lands over this long, pitiless road to the holy city and back again. And it would be interesting to know how many thousands of the faithful passed up and down it during the twelve hundred years it was in use.

Now it is empty—steam navigation in the Mediterranean, no doubt, diverted many of the pilgrims from the desert route, and the opening of the Suez Canal and the building of railways assisted in terminating the flow of travellers along the Darb el Haj.

Captain Claud Williams, who knew this desert like a book, has described the masrabs, or caravan routes, as they were twenty years ago :

They consist of wavy camel tracks a few feet apart, running parallel to one another, and varying in number from five or six to fifty or sixty, according to the importance of the route. In one case 120 distinct camel tracks were counted, and the mashrab was consequently over 100 yards in width.

The masrabs appear to be of great antiquity, for the tracks are, in some places, deeply worn into solid rock ; the constant traffic over a period of hundreds of years has rendered them much firmer and more solid than the surrounding unbeaten desert.

They are of great importance to the traveller, for not only do they generally indicate good and direct routes, but where they have been correctly mapped they provide him with valuable landmarks for his guidance. Unfortunately, their significance was not

fully appreciated when the patrols started work in 1916, and the various trade routes which radiate from Wadi Natrun and from Moghara have not been charted. . . .

Besides the well-known trade routes, there are small ill-defined routes known as Masrab (or Darb) Haramea or "smugglers' roads." Several of these have been noticed in the sand country south of Siwa and also on the plateau near the escarpment. They are off the direct line between wells or important places, and are, therefore, useful to those desirous of escaping observation. . . .

The course of a large masrab is generally marked at frequent intervals with camel bones and with human graves, which testify to the toll which the desert exacts from intruders into its solitudes. These, especially the tiny graves, present a rather pathetic appearance to the traveller by motor-car who traverses in an hour what would be a wearisome day's journey on camel back or on foot.

I have quoted at length, as this may be one of the last descriptions of the caravan routes now fast disappearing. Gradually they are being obliterated from want of use. The older Survey maps were made more interesting when they traced these masrabs and the routes of the former pioneer travellers, with their names and dates. It is a pity too that some of the old place-names are omitted or changed, such as Bordān, Derasiya, and Bir and Minqar Lebbūk. For over a hundred years these were the names known by the Beduin and European travellers.

Less than twenty years ago, before the motor road was made along the Gebel Maryut, one saw the series of parallel camel tracks and the camel convoys passing along them. The construction of the motor road and the ploughing soon obliterated them. International boundaries, such as that between Egypt and Cyrenaica, discourage the old caravans from Tunis. International intercourse is more difficult, and the camel is becoming more and more a thing of the past. Improved motor transport such as that used by the late Prince Kamel el Din, by Prince Omar Toussun, by Captain Bagnell and others, and aeroplanes, have greatly devalued the proud " Ship of the Desert."

XIX

Some Old Travellers and Old Maps

WE must be indebted to le Sieur Granger [1] for reminding us that after the destruction of the Pharos, mariners approaching Egypt picked up Abu Sir as their first landmark.

Les terres d'Alexandrie sont extrêmement basses, la seule reconnaissance qu'en ont les naviguans, après la tour des Arabes qui n'en est qu'à douze lieuës du côté de l'Ouest, est la colonne de Pompée, ce qui oblige souvent les bâtimens d'aller à Chypres et quelquefois en Syrie quand les terres sont embrumées.

This is why the Tour des Arabes plays such an important part on all the old maps between 1500 and 1850, about which date Ras el Tin lighthouse was finished.

It was two hundred years ago that le Sieur Granger from Dijon came tramping out from

[1] *Relation du Voyage fait en Egypte, par le Sieur Granger en l'année 1730 : Où l'on voit ce qu'il y a de plus remarquable, particulierement sur l'Histoire naturelle*, Paris, MDCCXLV. " Il parcourut toute l'Egypte en 1730–32 " with the French consul, and describes Alexandria, the wreck of its former glory, with from 14,000 to 15,000 inhabitants only.

Alexandria over country where there were " ni bois ni pâturages, ce sont des terres couvertes de sable qui peuvent à peine produire quelques dattiers." Lake Mareotis still had some water in it at the time of the inundation. He visited the " Château d'Abouzir " and, six leagues farther on, another château " sur les murs de laquelle on voit les restes d'une inscription Arabe " ; this was Qasr el Imayid, another mariners' landmark, by the way.

The next traveller of note was W. G. Browne,[1] who set out to explore for the last vestiges of the Temple of Jupiter Ammon :

I procured a proper person as interpreter, and made the necessary arrangements with some Arabs, who are employed in transporting through the desert dates and other articles, between Siwa and Alexandria, to convey my baggage and provisions, and to procure for me a secure passage among the other tribes of Arabs, who feed their flocks at this season in the vicinity of the coast. In this I was much assisted by Mr. Baldwin, who readily entered into my views, and used all the means in his power to promote their success.

When the Arabs had finished the business on which they came to the city, and had fixed on an hour, as they thought, auspicious to travellers, they made ready for departure ; and on Friday, 24th February 1792, we left Alexandria. The inclina-

[1] W. G. Browne, *Travels in Africa, Egypt, and Syria*, London, 1799. The George Baldwin mentioned was British Consul-General in Egypt, 1775–97—a man of great ability.

tions of my conductors were in unison with mine, in the choice of a route ; for they preferred that nearest the sea, for the sake of forage for their camels, which abounds more there than in the direct road ; and I preferred it, as being the same that Alexander had chosen for the march of his army.

We travelled the first day only about eight miles, in which space several foundations of buildings are discoverable ; but so imperfect are the remains, that it is not possible to say whether they were antient or modern, or to what purpose they might have been applied. From that time till Sunday, 4th March, our route lay along the coast, and we were never long together out of sight of the sea. The coast is plain ; and after having left the neighbourhood of Alexandria, where it is rocky, the soil is generally smooth and sandy. Many spots of verdure, particularly at this season, relieve the eye from the effect of general barrenness ; and though the vegetation is very inconsiderable, the greater part of it consisting only of different kinds of the grasswort, or kali, it offers a seasonable relief to the suffering camel. For our horses we were obliged to carry a constant supply of barley and cut straw.

In February the young desert barley should have been showing, and it seems difficult to understand how such a careful observer as Browne did not notice it. It seems probable, therefore, that there were only very small areas cultivated at this time—in other words, the Maryut was almost entirely barren in 1792.

Browne continues :

There are several kinds of preserved meat pre-

pared among the Orientals for long journies. They obviate the inconveniency of salt provision by using clarified butter. The kind most used is called *mishli*, and will keep good for many years. It is brought from Western Barbary to Kahira.

In the places where we generally rested are found the jerboa, the tortoise, the lizard, and some serpents, but not in great number. There is also an immense quantity of snails attached to the thorny plants on which the camels feed. These the Arabs frequently eat. Very few birds were visible in this quarter, except of the marine kind. One of our party killed a small hawk, which was the only one I saw. Near the few springs of water are found wild rabbits, which in Arabic they distinguish by the same name as the hare, and the track of the antelope and the ostrich are frequently discoverable. We passed no day without being incommoded with frequent showers ; and generally a cold wind from the north-west and north-west by north. Several small parties of Beduins, who were feeding a few goats, sheep, and asses, were encamped in the road, and in the vicinity of the Lake Mareotis, now dry. Such of them as were friends of our conductor received us with every mark of hospitality and kindness ; and regaled us with milk, dates, and bread newly baked. One party, indeed, became contentious for a present, or tribute, on passing ; but being in no condition to enforce their demand, it was after a time relinquished.

Thus they travelled through the Maryut a hundred and forty years ago. On the eighth day out from Alexandria they turned their backs to the coast and proceeded south-westwards towards

Siwa, where they arrived five days later. Browne was the first European to visit the Oasis in modern times. He was followed by Frederich Hornemann in 1798, who travelled from Cairo *via* Wadi Natrun and Moghara to Qara and Siwa. From there he went into Fezzan, while Browne penetrated into Darfur.

Cailliaud and Latorzec visited Siwa in 1819, and in the same year Belzoni went to Bahariya and Sir Archibald Edmonstone made the pioneer journey to Dakhla ; but the next Europeans to explore the Maryut was the Prussian expedition under the Swiss, von Minutoli, in 1821. Scholz tells us that this party consisted of nine Europeans, and they left Alexandria early in October. On their journey they examined all the ancient buildings along the route, and Scholz mentions several places which are impossible to identify owing to his spelling, among them the elusive "Abdermain," four leagues to the west of Qasr el Imayid and two leagues from the sea. Pacho mentions this place also, and marks it on his map S.S.W. of El Imayid.

Frustrated in their desire to visit Cyrene, they turned southwards to Siwa. Having stayed there some time they returned by way of Qara, Bir Lebbuk, and Hammam, where one of their party died ; another, Liemann, professor of Architecture, died in Alexandria a day or two after their

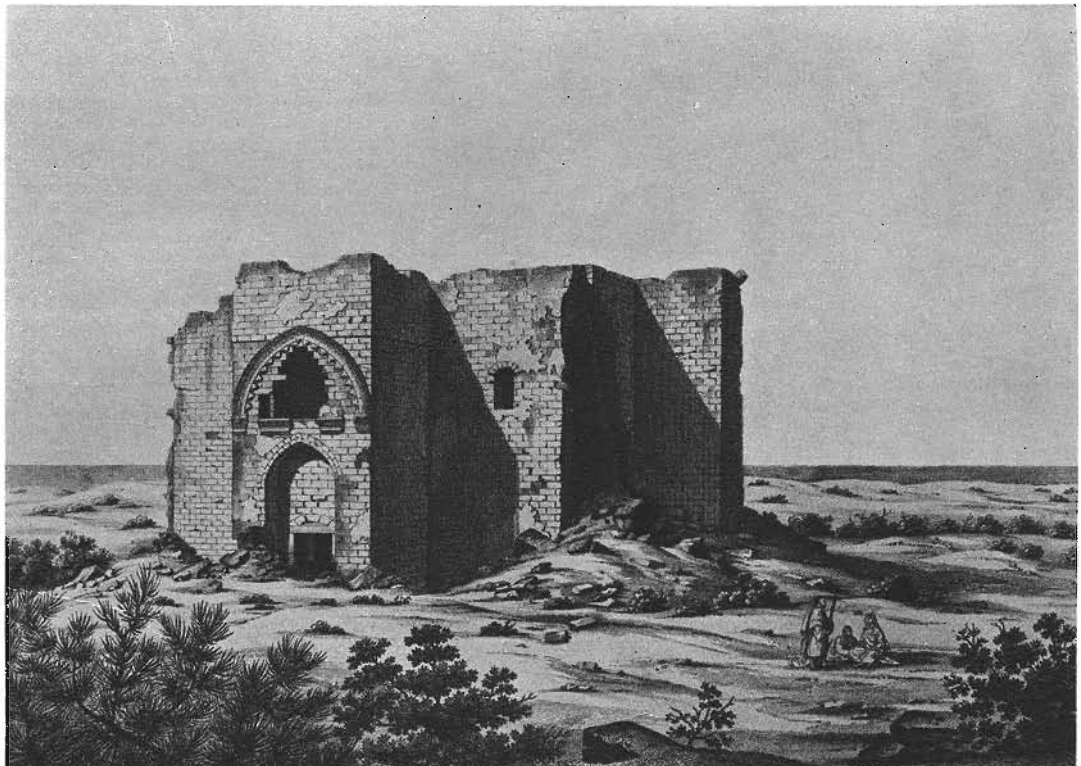
return from their two months' travels. All were in bad health :

We suffered severely on this journey. The want of water and provisions obliged us to make very long stages, while the heavy rains at the beginning of December, cold north winds almost daily at the end of November and beginning of December, damp chilly nights, swarms of vermin in our linen, and a hundred other hardships filled up the measure of our sufferings.[1]

Our next traveller is Jean Raimond Pacho, born at Nice in 1794, and who was only thirty-five when he died. This brilliant young explorer left Alexandria early in November 1824, and his route map shows Bousbekah (?), Abu Sir, Boumnah, Kassr Ghettadjiah, Bourden, Lamaïd, Abdermain (?), Kasabah Chammameh el Gharbieh, Dresieh, Abou Selim (?), Benaieh, Maktaerai, Djammernah, el Heyf, etc.

Some of these places are difficult to identify, and the last five are outside the Maryut district, but I surmise that Djammernah is the Qasr Gemaima of Bayle St. John, which was one of the signal towers on the road to Cyrene. Pacho has left us some fine engravings of the ancient buildings at Abu Sir, Qasr el Qatāgi, Qasr el Imayid, and of two qassabas. I have already quoted from his accurate descriptions

[1] Scholz, *Travels in the Countries between Alexandria and Paraetonium, the Libyan Desert, etc., in* 1821, London, 1822.



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THE 13th CENTURY CASTLE OF SULTAN BAYBARS AT EL IMAYID

FROM A DRAWING BY J. R. PACHO IN 1824

of these places, but unfortunately his valuable book (*Relation d'un Voyage dans la Marmarique, la Cyrénaïque, etc.*, Paris, 1827) is the rarest work dealing with the Maryut, and I am greatly indebted to H.H. Prince Omar Toussun for the photograph of Pacho's engraving of Qasr el Imayid. I think his is one of the only two copies in Egypt. A copy was offered from Paris for 4500 francs, and it is curious to record that another rare book, dealing in part with Maryut, James Hamilton's *Wanderings in North Africa* (London, 1856), was picked up many years ago on the Quais in Paris for one franc !

On the other hand Bayle St John's *Adventures in the Libyan Desert* (London, 1849) is easier to come by. This book gives a most detailed and interesting account of a journey through the Maryut in the month of September 1847. The author and three other young Englishmen from Alexandria made a most successful trip to Siwa, in the days when the Beduin were getting out of hand again, and only a handful of Europeans had made the journey. They started from Abu Sir, then a quarantine station in charge of an Italian.

At length . . . the wished-for day arrived, and we were on foot as usual before the sun, and down in the misty valley by the well to perform our ablutions—a luxury which we might not always be able to enjoy in the Desert. Four camels, with old Yunis, soon made their appearance ; and, after a

great deal of bustling and shouting, all our traps, including a ponderous supply of beans and a huge bag of chopped straw, were properly distributed, . . . we mounted our donkeys in full travelling costume ; and, followed by Derwish and Saad, our attendant Egyptians, . . . began to move down the valley to the west.

They were back again in Alexandria exactly a month later :

Our poor donkeys seemed to know that they were near their journey's end, and went most willingly, so that we came into the Minsheyeh in capital style, very ragged, very dirty, very much burnt, and very hairy, much to the surprise of our friends, who expected us to be devoured by the cannibals.

I should like to quote more from this book, of the days of their camping and progress through the Maryut, and of their alarms about robbers, and the description of Siwa and their experiences there, but I must pass on to James Hamilton, who came from Cyrenaica through Jalo and Siwa in 1852–53. He too had thrilling experiences at Siwa, but managed to get away to Qara. At Bir Khalda they lost many of their horses and camels, and they passed north through Bir Abu Batta to Bir Abu Gerab near the modern Galal :

From Bu Jerabah we travelled over slightly undulating country covered with a short, wiry grass

called by the Arabs wild barley, which affords excellent pasture for horses, till we reached Turbiat (?), in five hours and a half. . . . Twenty-five hours were employed in the two following days in reaching the wells called El Hammam. We had now left the coast-line, but the next day, an hour and a half after starting, having the Arab's Tower or Abou Sir, the old Taposiris, in sight, we passed through extensive ruins, marking, perhaps, the site of Antiphræ, so famous for its wine—it was so bad. [This was a shot in the dark, Antiphræ was probably situated much farther west, and on the coast.] At a considerable distance to the right rise the flat hills of Hoshm el Aish, which may be said to bound the district of Mariout. We only made nine hours this day, stopping at Caraya (? El Ḳarein) where are five wells of ancient construction, the largest built with very solid masonry, having an orifice of twelve feet by three. The old Lake Mareotis is now an extensive plain, covered with dark shrubs, and dotted with low, yellow mounds.

Two thousand female dromedaries belonging to the Viceroy were stationed here for the pasturage, the best camel-browsing ground in Egypt. I wondered to what purpose they were applied, and admired his Highness's tender solicitude for his stud of Arab horses, when I learned that, immediately after the mares foal, the dromedaries are sent up country to supply them with milk. His horses are decidedly the best lodged, best fed, and best cared for of the present Pacha's subjects. After passing the two Marābut chapels, Abu Hadidj and Sheikh Masa'udi, (Sidi Abu Khadiga and Sidi Mas'ūd east of Amria aerodrome), which lay to the right, we came to the first village in Egypt, Gheita, and stopped, eight hours from Caraya, at El Hamra. The next day

was the last of our weary journey : in two hours we came to El Hhosh, which is celebrated for its breed of falcons ; and in six hours more we pitched our tents outside the flourishing town of Damanhur.

This was a fine journey, and it has not been equalled as yet, even by car. In these days of desert motoring, it is worth recording that it is nearly twenty years since the whole of the Western Desert, between the Wadi Natrun and the Oases round Siwa, and between Borg el Arab and Bahariya and Farafra, was thoroughly explored by the Light Car Patrols. The very names of the pioneers of desert motoring will soon be forgotten, Lieut.-Colonel Llewellyn Partridge, Captain Claude Williams, Major Wilfred Jennings-Bramly, Doctor John Ball, Major Owston, Captains Lindsay and Davidson, Lieut.-Colonel Nowell de Lancey Forth, and others.

These intrepid motorists travelled thousands of miles from 1915–16 onwards, through country hitherto thought unfit for cars—and in cars which would be museum pieces to-day. Some of these explorers have been criticised for adopting such temporary names as Owston's Dunes, Williams's Dunes, Partridge Gap, or Wilson Peak, but at the time there were no Beduin to ask the local name of any fixed point or gap in the sand-dunes, and maps had to be made in a hurry for the patrol operating under war conditions.

These personal names are now being omitted or

replaced on the latest maps, but it is some satisfaction that the name of Captain Williams, and some of the old caravan routes, will go down to posterity in the Italo-Egyptian Accord delimitating the western frontier of Egypt. The line of this frontier is therein described as following the Masrab el Sheferzen and other routes, and as keeping to the west of Williams's Pass and Melfa. A little to the south of Williams's Pass this desert frontier runs straight down longitude 25° for about 800 kilometres to Ouenat.

If modern maps are becoming less personal and more accurate, the old maps are worth preserving, because they are often interesting and amusing. My earliest map is the *Tabula Aphricæ III.*, and is probably one of Gastaldi's maps, based on Ptolemy's geography, and printed in Venice in 1541. It shows the coast from Cyrene to Pelusium, and in the sea off the coast of Mareotis is a ferocious monster swallowing a man who looks back pathetically as he disappears. This tragedy is taking place off Derris, which is placed between Antiphra and Glaucum. Eastwards of Glaucum is Chimo, Plinthine, Chersonesus, and Alexandria. Inland are all kinds of interesting mountains and places, and Marmarica extends down to the Tropic of Cancer.

I have a large coloured map, *circa* 1570, of *Ægypti Recentior Descriptio*, which shows the country west of the Nile, and labels the Maryut district Erriff. On the coast are Torre della Arabia, or Plinthine,

and the Golfo de Arabia. Beyond is Cacobericho Turris, or Chimo Vicus, and, in my opinion, this "tower" must have been Qasr el Imayid. "Cacobericho" is shown on many of the old maps, and west of it is Isola di Colombi or "Phocusæ Insulæ duæ," Ripa Alba, and Cabo Bianche.

By far the most entertaining map is the large one supposed to be by Sieur N. Sanson d'Abbeville, published in Paris by E. Michalet in 1693, and entitled *Les Déserts d'Égypte, de Thébaide, d'Arabie, de Sirie, etc. : où sont exactement marqués les Lieux habituéz par les Saincts Pères des Déserts.* The great charm of this map is that the whole of the desert is peopled by saints, hermits, and strange animals, who live and work among shrines, trees, and mountains. In the Maryut St. Estienne is shown engaged in several occupations, charming snakes, harrowing, binding sheaves, and cutting firewood. This was "le désert où s'arresta St. Hilarion," who afterwards embarked at Paraetonium for Sicily. Not far off is St. Fuloge resting, and in the "Désert des Cellules," St. Nathanael is preaching. In the Désert de Nitrie—"Ruffin avec quelques Solitaires est poursuivi par des crocodilles," although not far off "Ste. Hélène passe le Nil sur un crocodile." Out at sea are two ships, one contains pirates intent on attacking the other, on which St. Hilarion has taken a passage, and "St. Hilarion arreste et fait reculer une barque de Pyrates qui le poursuivoient et estoient prêts de le joindre."

D'Anville's map, *Ægyptus Antiqua*, dated 1765, shows Chersonesus, Nicioe, Pagus, Plinthine, Taposiris, and Chimo, with Marea on the north side of Lake Mareotis and Apis at the extreme west end of it. He shows also the bed of the "Lycus Fluvius" running in a northerly direction from Lake Moeris into the Maryut district. All the stories, however, of a branch of the Nile flowing through the Libyan Desert, from Père Sicard in 1712 down to Monsieur Lorin in 1926, have been destroyed by Dr. John Ball in his articles on the "Problems of the Libyan Desert."

But D'Anville marks clearly a canal corresponding to the Asara flowing into Lake Mareotis, and other interesting items. In many of the early maps the lake is shown as Bucheira Lacus, and the Maryut is shown as the Cassilif de Bouhera, whereas the modern Behera is shown as Errif (Sanson d'Abbeville, 1656). Likewise the Alexandria canal from the Rosetta branch of the Nile is shown as if it was a branch of the Nile itself. This was the common belief in those days, and is well illustrated in the fantastic view of Alexandria done in Amsterdam by one Wolfgang in 1686. Here we see "The Nyl that floweth through the City," and "The Sea of Bucharia" (Lake Mareotis) as part of the Mediterranean! This view seems to be largely copied from Braun and Hogenberg's picture of Alexandria in *Civitates Orbis Terrarum*, published in Cologne in 1593-94.

An early map which gives a great deal of information is Duval d'Abbeville's *Ægyptus Antiqua*, dated about 1650 (Jansson) ; He shows an enormous Lake Moeris quite close to a smaller Palus Maraotis.

Xenephyris is shown on the coast between Alexandria and Plinthine, then comes Cinossena, and beyond is the frontier of Egypt and Libya between Glaucum prom. and Leucaspis. Inland we find Taposiris Magna, Phamotis, Pallemarius Vicus, Almyroe, Monocaminon, Antiphili, Coby, all within Egypt. Mareotis, however, is shown near the Fons Solis of Ammonia, whereas Nitrius is shown correctly according to modern ideas.

Before leaving this subject I must mention once again the fine maps, made by order of Napoleon, in the Atlas Géographique published with the *Description de l'Égypte*. Besides Sheet 37, which I have constantly referred to, there are others worthy of close examination.

Lastly, through the kindness of Monsieur H. Munier, I have been privileged to see the interesting plan of Alexandria and the *Carte des Environs d'Alexandrie* which were printed in Paris in 1866, and should have accompanied Mahmud Pasha el Falaki's *Mémoire sur l'Antique Alexandrie, ses Faubourgs et Environs*. The map shows the results of Mahmud Pasha's very careful survey of the neighbourhood, especially the north-eastern end of the Maryut, and perhaps the most interesting part of the map is where he traces the

ancient (El Asara) canal running north-west by Abu El Matāmir, Riyāshāt, Kom Hifein (" Edjfin "), and Kom Bilal. On this ancient canal, between Kom Bilal and Ilwet el Nimr, he found an ancient bridge. Perhaps some day this bridge will be found again, and we may have here the bridge of St. Peter the Apostle at Dafashīr. He marks also the ruins of the long town site by the lake north-east of Bahig, the Amriya causeway, and much else of interest, and if he wrongly identifies Naukratis with Damanhur, his map remains a fine piece of work.

XX

An American Military Expedition in the Maryut in 1805

EXCEPT for Mohamed Ali Pasha's punitive measures against the Beduin caravan plunderers in 1820, the last military expedition through the Maryut before the Great War was, curiously enough, an American raid from Alexandria to Derna by General William Eaton in 1805. This gentleman was American Consul at Tunis, and, owing to the plundering of American shipping in the Mediterranean by the Tripoli pirates, Eaton determined to take an expeditionary force by land from Egypt against Yusuf the Pasha of Tripoli. He resolved to put the Pasha's rival and brother, Hamed, into power, and thus, in the place of Yusuf, have Hamed as an ally of America. Hamed readily agreed with the scheme, and with Eaton collected their forces in Egypt.

When all was ready, Eaton set out from Alexandria and marched through the Maryut with a handful of American marines under a Lieutenant O'Bannion, some Egyptian volunteers, and a few

unreliable Beduin allies. During an arduous march of over 500 miles, the marines saved Eaton from at least one attempt on his life. The little force arrived at Derna and, with the assistance of two or three American ships of war, they captured the city, " the first and only land conquest which the Americans ever made in the Western world " until the Great War. However, Derna had to be evacuated before the object of the expedition was fulfilled, owing to the bad faith of the American Consul-General at Algiers, who negotiated peace with Yusuf at Tripoli at the moment when Eaton was successfully holding Derna, while waiting for the American naval attack on Tripoli. At the time America had no less than twenty-eight vessels of war available in the Mediterranean for this purpose.

Mr. Rennell Rodd [1] thus sums up Eaton's remarkable march :

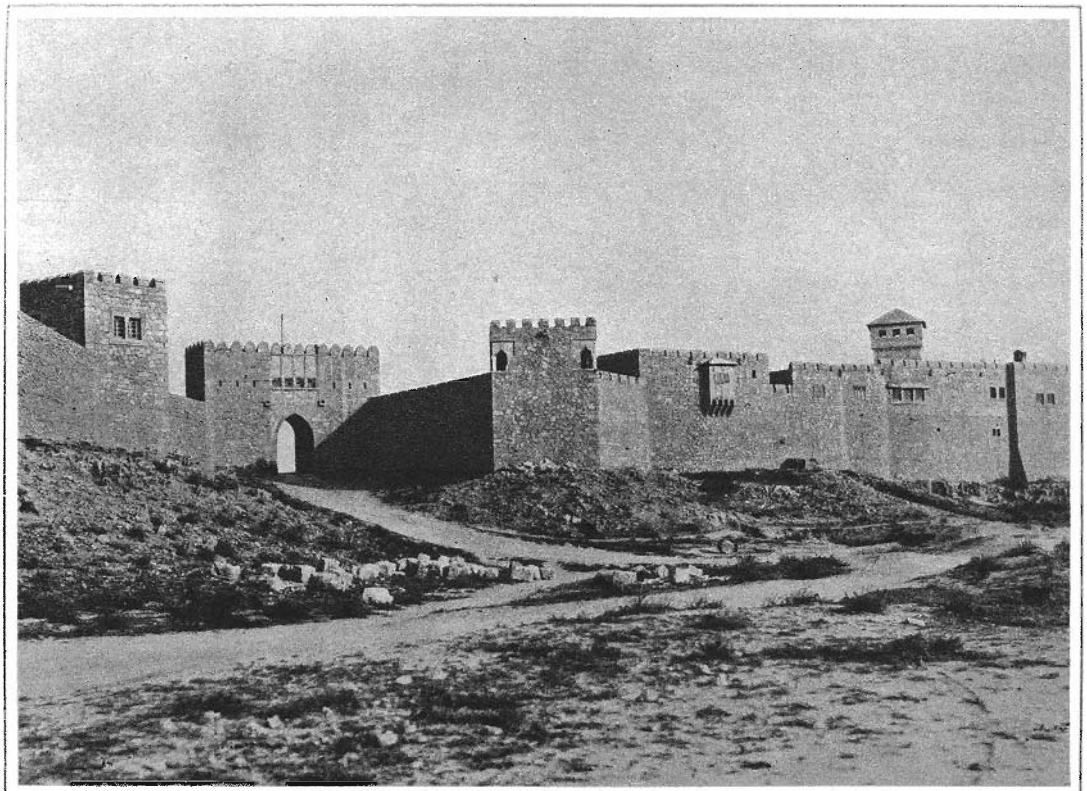
> Since leaving Alexandria the expedition had in fifty days covered some 520 miles without any casualties. For ten days the officers and troops had lived on the barest possible allowance of food to avoid exhaustion. For three days there had been practically no food at all, even for the white personnel. During two months of constant anxiety in recurrent emergencies, the officers had never taken off their clothes.

[1] See *General William Eaton : The Failure of an Idea*, by Francis Rennell Rodd (London, 1933), and *The Diplomatic Relations of the United States with the Barbary Powers*, 1776–1816, by Ray. W. Irwin, University of North Carolina Press, 1931.

The convention or treaty between Eaton on behalf of the U.S.A., and Hamed Karamanli on behalf of the Pashalik of Tripoli, was actually signed at Arabs' Tower (Borg el Arab) on 4th March 1805.

This out-of-the-way place is therefore of historical interest to Americans. Mr. Rennell Rodd tells us how on the very same day Thomas Jefferson took the oath as President of the U.S.A. for his second term of office, and in his inaugural address stated: "We are firmly convinced and act upon the conviction that with nations as with individuals our interests soundly calculated will ever be found inseparable from our moral duties." "It is perhaps unkind," says Mr. Rodd, "to repeat the President's words . . . but within a few weeks 'sound calculation' counselled betraying Hamet Karamanli, abandoning Eaton's policy, and making a shoddy peace behind his back."

In passing from this sad story I may conclude by mentioning that the old English banking house of Messrs. Samuel Briggs Brothers, of Alexandria, lent Eaton money to finance the expedition. This firm is remembered now only when we pass the Rue Briggs near the Mahmudiya Canal on the road to the Maryut.



BORG-EL-ARAB VILLAGE

Photo : Dr. Maurer

XXI

The Present Inhabitants

ANDRÉ VON DUMREICHER BEY, in the second chapter of his *Trackers and Smugglers in the Deserts of Egypt* (London, 1931), gives us some very interesting details of the origin of the Aulad Ali tribe, the present inhabitants of the Maryut. They number in the Western Desert more than ten thousand and are a good and peaceful people if properly treated by the visitor, but familiarity soon breeds contempt. Ten or fifteen years ago there were no crowds from Alexandria, no flower-selling, and no contempt for the foreigner. It is true, however, that twenty years ago nearly every Beduin carried a long gas-pipe gun and was feared somewhat by the townspeople, and this was natural, for the Beduin had a very old reputation for plundering.

Browne tells us the gates of Alexandria were shut every night in 1792 against possible raids by the Beduin: "The few flocks and herds, which are destined to supply the wants of the city, are . . . generally brought in at night, when the two gates

are shut ; as they also are whenever it is known that hostile tribes are encamped near them." As late as 1843 the gates of Alexandria were still closed at night ; [1] and, as a last reminder of the former lawlessness of the Beduin, I may say that before the War, if one wished to visit Abu Sir or Abu Menas, the Alexandria City Police had to be informed. The Police Post at Bahig were instructed accordingly and provided an escort if necessary.

In those days the Beduin lived a fine, free life, cultivating their barley (then largely exported to the brewers at Burton-on-Trent), tending their herds, hunting gazelle, and smuggling a little when they could. Then about 75 per cent. of the Aulad Ali belonged to the Senussi sect, and the history of this movement is somewhat interesting.

The founder of the sect was Mohamed Ali el Senussi, who came to the Benghazi district from Algeria and founded several *zawias*, or religious schools, about 1839. His doctrine was the simple Koranic Law, purified of all the later accretions, and his influence spread to Egypt, Tunis, and elsewhere. Under his son, Mohamed el Mahdi el Senussi, the influence and power of the movement expanded along the whole of the north coast of Africa and into Arabia and the Sudan.

When Mohammed el Mahdi died and was

[1] *Sand and Canvas : A Narrative of Adventures in Egypt*, by Samuel Bevan, London, 1849.

buried at Kufra in 1902, it was believed by his followers that he would rise again as the deliverer of the Faithful. His son Mohamed Idris being too young to succeed him, Ahmed el Sherif el Senussi, a grandson of the original Senussi, was elected head of the sect.

It was Ahmed el Sherif who came under the influence of Enver Bey, then in command of the Turkish forces operating against the Italians in Cyrenaica, and he went so far as to take a solemn oath in public that he would make no peace so long as there was a single Italian in the country. As is well known, the Italian operations in Cyrenaica dragged on for a great number of years, but all this time, prior to the Great War, the Sheikh el Senussi was at peace with Egypt, although he continued to exercise influence over the Beduin of the Western Desert and his *zawias* were to be found all over the country.

When the Great War had been in progress some fourteen months, and Italy had joined the Allies, German and Turkish agents began to busy themselves with suggestions to the Senussi to invade Egypt. Now was the chance for the great "Pan-Islamic" movement so dear to the German mind, and arms and ammunition were smuggled into Senussi territory—secret agents, in the meantime, working for a general rising in Egypt and Arabia against the Allies.

At last hostile acts were committed against the frontier posts at Salum and Sidi Barrani in November 1915, and part of the Turco-Senussi forces of between ten and twenty thousand armed men, with followers, advanced into Egyptian territory as far as Marsa Matruh.

They were defeated (see Appendix A), no Pan-Islamic rising took place, the German and Turkish agents were discredited, and from that time the Senussi lost influence in Egypt. The wretched Beduin of the Maryut and farther west, who had been enticed away with their herds to the Senussi early in November 1915, soon found that they had to decide between starvation with the Senussi or to return broken to the British camp. I well remember seeing these people coming back in a half-starved state, mostly gaunt old men, women, and children. The British fed them and allowed them to pass back to their lands.

Easily defeated in Egyptian territory the struggle between the Italians and the Senussi dragged on for another fifteen years until they were finally crushed about 1931, but Ahmed el Sherif had escaped to Constantinople in a German submarine in 1916, and died not long ago while guest of Ibn Saud in Arabia.

The Beduin, after this little interlude of war and its consequences, settled down to their old life once more, ploughing and sowing once a year, reaping, or

rather "pulling," their barley and tending their herds.

The Ministry of Agriculture has helped them much to improve their condition, and what has been done in this connection is described in a later chapter.

XXII

Preservation of the Fauna and Flora of the Maryut

LOVERS of Nature should be thankful to the government which has prohibited people in cars from hunting gazelle, and which has laid down certain laws regarding the netting of quail. It is most unfortunate, however, that the Beduin are allowed to catch and maim young birds of all kinds in the spring, and this practice is increasing merely because thoughtless Europeans and others buy these birds. It is therefore a profitable form of cruelty. Furthermore, the Beduin root up plants of all kinds for sale to Alexandrine motorists on the Alexandria-Borg el Arab road, and many of the flowers " picked " are thrown away by the wayside.

In November 1933 an international conference was held in London to study the means for protection of the fauna and flora of Africa, and a resolution to the following effect was signed by the delegates of the nine countries interested, including Egypt :

The preservation of the fauna and flora to be achieved by the constitution of national parks or

reserves, within which the collection and destruction of flora shall be limited or prohibited, and the hunting, killing, or capturing of fauna shall be limited or prohibited.

Unfortunately, the reasons for applying such drastic measures in the Western Desert are increasing, and the car people and other visitors will be largely to blame if this is done. There is, however, another remedy which is in the hands of the public themselves, and that is to abstain from *buying* any captured or maimed birds, and to refuse to *buy* any flowers or bulbs from the Beduin, and, lastly, to limit their own picking of flowers, or the digging up of bulbs, to a minimum.

If the public do not co-operate in this way to protect Nature, it seems to me that we cannot complain if the government proclaims the Western Desert a national park and restricts further the liberties enjoyed by man.

The Beduin would not suffer from the loss of a few piastres yearly if the public refused to buy these poor maimed birds and flowers from them, because this " trade " is a new one and was not practised prior to 1925 ; and furthermore, the district (Amriya) in which it is rampant is a comparatively rich one in which there is much employment, good land, and trade in sheep, barley, tibn, figs, dates, eggs, and quail. West of Borg el Arab, where there is no demand from the foreign public, the practice of bird-

maiming and flower-pulling is, at present, non-existent, but the danger lies ahead—the blight is spreading.

By Law No. IX. of 1912 regarding the protection of birds useful to agriculture, it is forbidden to shoot, capture, destroy, sell, or purchase any of the following birds : Wheatear, Warbler, Wagtail, Pipit, Fly-catcher, Lark, Bee-eater, Hoopoe, Stone Curlew, Green Plover, Spur-winged Plover, or Egret. All of these, except the last two, frequent the Maryut at some time or other, and some of them are being shot or captured and sold openly at the present time.

XXIII

Modern Developments in Agriculture

THIS little book has endeavoured to show how highly developed and civilised was the Maryut at a period between one and three thousand years ago. All came to naught—due, firstly, to geographical and geological changes; secondly, to the slow climatic degeneration; and thirdly, and perhaps largely, to the neglect of man.

We have seen from the travellers Browne and Hamilton that agriculture in the Maryut was at a very low ebb in the last century. Bayle St. John gives us more exact details of the poor cultivation when he says (September 1847):

> . . . At various points we saw patches which the Bedawins had selected wherein to sow dhourra, barley, etc. The ground was scratched with their little plough. At some places we saw remnants of the spring crop, consisting of thinly sprinkled stubble about 18 inches high. This cultivation entirely depends on the winter rains; . . . These scraps of vegetation, rarely more than 100 yards in length, are tended by a few half-civilised Bedawin families, living in tents or little stone huts; . . . I have often

. . . had occasion to mention the going down of the children of the Desert into the land of Egypt for wheat; this is now a regular practice. Every autumn the young men of each tribe gather all their spare camels and travel many hundreds of miles in order to bring back a few sacks of grain to eke out the produce of the unkindly soil of their own valleys.

The invasions from the west, the insecurity of the later Arab rule, the lawlessness of the Beduin, very nearly extinguished cultivation of crops altogether.

It is stated that during the reign of Said Pasha some attention was given to the Maryut, and many wells were reopened. The prolongation of the railway and the plantations of vines, olives, and date palms at Amriya and Ikingi by the Khedive Abbas Hilmi were steps towards regeneration. Mr. Bramly followed with a further plantation at Borg el Arab—now, fortunately, much enlarged and developed by the Ministry of Agriculture.

The government have, more than once, tried to improve the yield of the barley. In Mr. Heald's experiments at Bahig in 1917–18 and 1918–19, although the rain was poor, over one *ardeb* of barley and half a *himl* of *tibn* per *feddan* was obtained. This was nearly double the yield from Beduin methods. In recent seasons further experiments have been made at Borg el Arab.

Arboriculture in the Maryut is now easy, as the Ministry of Agriculture give young trees free to any

Beduin who have land with sufficient well water for the trees to mature, so that there is no reason why the lands below the Abu Sir and Gebel Maryut ridges should not be studded with small plantations of olives, figs, vines, almonds, etc., within the next ten years.

These lands and the Abu Mena depression can be developed to a limited extent, but there is no chance of any Nile water reaching these uplands without lift irrigation. The levels of the land prohibit the Nubariya Canal being prolonged except to irrigate a limited area south and east of Amriya, amounting, according to the researches of Dr. Hume, to 12,500 *feddans*.[1]

If ever the Maryut is to be developed with lift irrigation, supplementary labour will have to be brought from the Delta, as the present scanty Beduin population in the interior is not sufficient nor would it appreciate regular employment on the land throughout the year.

It is hard to see how so expensive a scheme would be justified or even popular among either the imported labour or the Beduin inhabitants, nor does it seem called for at present, as there are vast lacustrine areas (including Lake Mareotis) and the northern Delta lands awaiting draining and cultivation by the surplus Egyptian population as soon as

[1] W. F. Hume, D.Sc., and F. Hughes, F.C.S., *The Soils and Water Supply of the Maryut District*, Cairo, 1921. This book contains also the experimental farming results of H. M. Heald, F.S.I., referred to above.

the heightened Aswan dam is in full use and the Gebel Aulia dam in operation.

However, the development of the Maryut remains dear to many a capitalistic heart, without much thought where the labour is coming from.[1]

What can be done with the limited resources available is explained in the note at the end of this chapter, kindly drawn up for me by Mr. Thomas W. Brown, Director of the Horticultural Section of the Ministry of Agriculture.

A successful if limited experiment in growing vines for vintage was accomplished not many years ago with the initiative and capital provided by the late Monsieur Nestor Gianaclis. His estate lies about 35 kilometres south-east of Amriya, near to the Nubariya canal, and on the edge of the desert.

In a laudatory and not entirely historically correct article, which appeared in *The Chicago Tribune* (1932) and *The Manchester Guardian* (1933), special Egyptian numbers, Professor Andreades (of the University of Athens), has given some details of this enterprise.

It appears that M. Gianaclis was inspired to the project on reading Athenæus' description of the Mareotic wine. More than £E.300,000 capital

[1] " A few decades will suffice, experts assure, to transform the vast desert into a flourishing country, with several important cities, inhabited, as in antiquity, by a population of hundreds of thousands." Professor Andreades, in *The Chicago Tribune*, Egypt and the Sudan Annual, 1932.

was employed over a period of about thirty years in putting the land under cultivation, building model dwellings for the labourers, and making roads.

I have not been able to obtain the exact area under cultivation, but I have tasted a very good vintage of white wine called Cru des Ptolémées. It is to be hoped that the standard of excellence will be maintained, and that this Mareotic wine will become better known.

The following note on the Experimental Station of the Horticultural Section of the Ministry of Agriculture at Borg el Arab was written through the kindness of the Director, Mr. Thomas W. Brown, who has devoted many years of work to Egypt.

In past times it is probable that the olive was cultivated in the coastal region of Western Egypt.

The Ministry of Agriculture has made efforts during the last sixteen years to resuscitate this industry.

It was found that the technical methods followed in the cultivation of olives in other parts of Egypt did not lead to success in Maryut. It has therefore been necessary to carry out a series of trials which, fortunately, have proved successful.

The change in method of cultivation is, however, not the only factor which has led to this success. The introduction of the *chimlali* olive from Tunis, hitherto unknown to Egypt, has also been an important factor in the establishment of the olive industry in the district. This variety has proved to be highly resistant to drought.

Plants are distributed gratis each winter to

Beduins who plant and water the trees. In this way, about 200 gardens have been established up to the present, apart from an area of about 100 *feddans* planted by the Government at Borg.

The future of this region will depend very largely on tree cultivation. In addition to the olive, the carob [1] has been found to succeed admirably.

In low-lying situations, where rain-water collects, both the olive and carob pass through a dry summer without any help from artificial irrigation after a good season of rain in winter. Even in years of low rainfall the number of waterings required by the trees in summer does not exceed three or four times after the second year.

During the first years of the life of the trees they are watered by means of tins ; the water being lifted from the wells and cisterns. In the case of the wells, the water is for the greater part brackish,[2] for which reason it is important that the trees cultivated should be of a nature which enables them to resist drought.

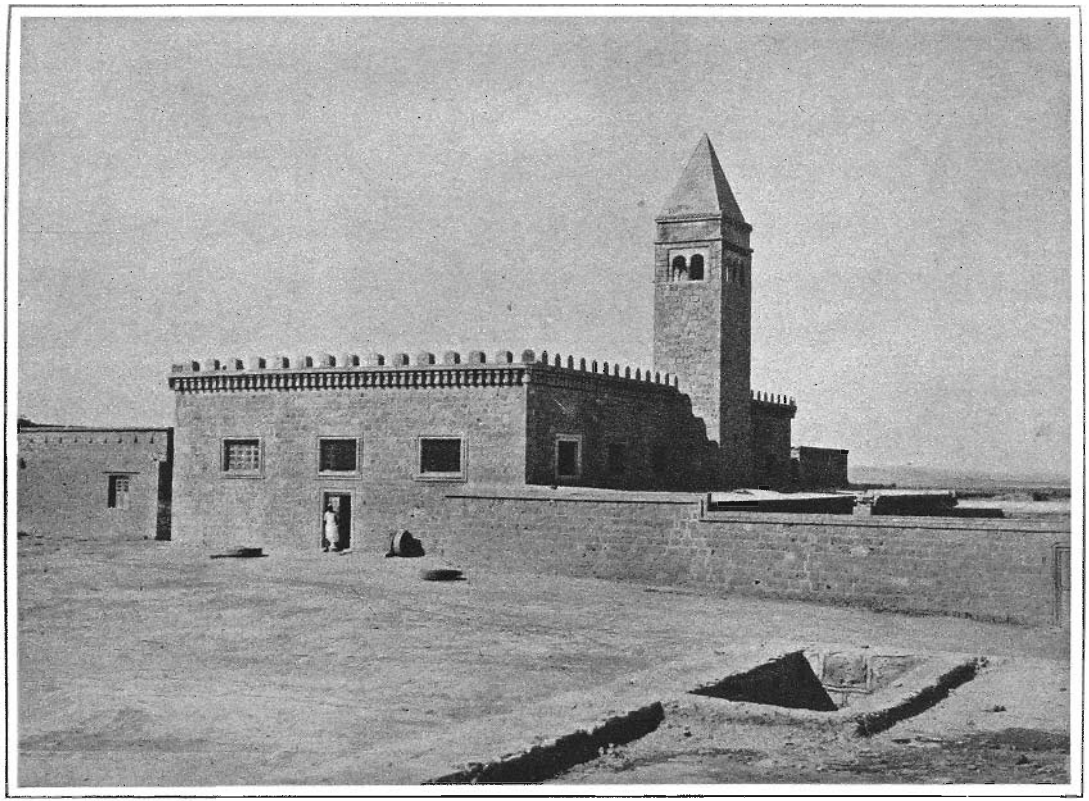
Frequent irrigation in summer causes an accumulation of salt, which is inimical to the growth of vegetation. The olive and the carob are drought resistant and also salt resistant.

The adult carob tree produces a crop of 120 kilogrammes of beans per year. The beans are used as food for men and cattle. There is also a big demand for the bean in Egyptian towns, where it is largely employed for making a favourite summer beverage. In the case of barley, lack of rain leads to the total loss of the crop, whereas in the case of the carob the trees continue bearing for two or more years without the help of winter rains.

The almond is another tree which supports

[1] The carob or algaroba (Arabic El Kharūba), or locust tree.

[2] See Chapter XVI.



BORG-EL-ARAB
OIL PRESS

Photo : Dr. Maurer

drought, and this tree also promises to be of assistance in the regeneration of Maryut.

The date palm grows well everywhere in the district. It is not materially affected by the salt in the water. On the other hand, it requires more frequent irrigation than the trees mentioned above. It, however, bears abundantly and well repays the cost of watering.

The jujube [1] grows well, and produces heavy crops which find a ready sale in Alexandria.

The pistachia,[2] peach, and apricot are on trial at the experimental station at Borg, and there is reason to think that in favoured situations the cultivation of these trees will be practicable on a fairly large scale. The grape vine is found in all Beduin gardens, but the methods of cultivation are extremely crude. Cultivators require guidance which will necessitate the services of technical instructors. Perhaps the greatest service which could be rendered to the Beduin at the present time would be the provision of *sakias* which would enable the people to irrigate their gardens and a small area of barley around each well in years of low rainfall. The food of the people could thus be assured even when the rain barley failed entirely.

In a year of good rain, such as 1928–29, Amriya and Bahig between them will sell over 9000 tons of barley, while the cereals purchased by the people

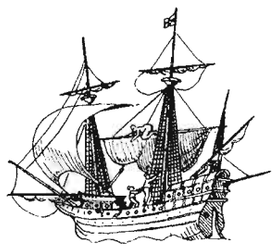
[1] Zizyphus, a shrub or small tree, the fruit of which is dried as a sweetmeat.

[2] The pistachia is the nut referred to in Genesis xliii. 11, along with almonds, myrrh, etc., which Jacob sent as *bakshish* to Joseph, and this passage in Genesis proves that the pistachia and almond trees bore fruit (in Palestine) in spite of the drought and the famine which was sore in the land at that time.

will be a few hundred tons only. In a lean year, such as 1932–33, these two places will sell under 400 tons of barley and have to purchase 800 tons or more of " corn out of Egypt " to prevent famine.

For four years the rainfall has been insufficient, but a certain private benefaction has saved great misery in the district.

MAREOTIS



GVLF OF PLINTHINE
OR
ARABS' GVLF

NELSON ISLAND
ABU KIR BAY
CANOPUS
TAPOSIRIS MINOR
SITE OF LAKE ABU KIR
LAKE MAADDIYA
ALEXANDRIA
PORTUS MARECTIS
LAKE MAREOTIS
EL BEIDA
SCHEDIA
EL KARYUN
CANOPIC NILE
MAHMUDIYA CANAL
KAFR EL DAWAR
CHERSONESUS
EL DIKHEILA
ENATON
TELL EL GA
KOM ISHU
KOM EL BIRKA
LUGIN
MENELAIS
TELL EL WAVLI
ABDEL QADIR
KOM EL TAFLI
ANCIENT BED OF LAKE MAREOTIS
DAMANHUR
HERMOPOLIS PARVA
BEHDET
EL AMRIYA
KOM BILAL
ILWET EL NAIR
SIDI KREIR
ABU SETR
TAENIA
MARYUT
MAREA
IKINGI
EL MAKADRIYA
ABU KHADIGA
KOM HIFEIN
KOM EL GILLO
PLINTHINE
TAPOSIRIS MAGNA
MALLAHET
SIDI MASUD
KOM TURUGA
KOM EL AKHDAR
EL HAUWARIYA
KOM EL RIYASIAT
EL AWIRI
EL GHAYATA
EL BARNUGI
MOUNT NITRIA
CANAL TO NAUKRATIS
ABU EL MATAMIR
HOSH ISA
BAHIG
BIR FITEIHA
KARM ABU GIRG
EL ASARA CANAL
BORG EL ARAB
EL MUNA CELLIA
EZBET GIANACLIS
EL BORDAN
CHIMO
EL GHARBANIAT
ST MENAS
NUBARIYA CANAL
DERASIYA
LEUCASPIS
ALAMEIN
EL HAMMAM
EL RUWEISAT
? BOMONA
EL QASSABAT EL GHARBIYA
EL QASSABA EL SHARKIYA
EL IMAYID
ALAM SHALTUT
KHASHM EL EISH
ABDEL ATI
QASR EL QATAGI
KHASHM EL QAUD
WADI EL NATRUN
EL ZAWYA

N

SCALE
0 1 2 3 4 5 6 7 8 9 10 20 30
KILOMETRES

ROADS OR TRACKS
RAILWAY

DESERT SUMMER

I some time wandered in a phantom land
'Midst brittle skeletons of asphodel,
And dust of withered leaves, and seeds that fell
Since last the sweet rains browned the pale ribbed sand.

Phantoms of old walled gardens, gently fanned
By the tempestuous breeze that may not dwell,
Whispering in the leaved branches, but must quell
The little golden grasses that yet stand.

Phantoms of pillared house and temple grand,
Of square-sailed barges rocking on the swell,
Laden with pointed oil-jars stood in sand.

Phantoms of sound : of ripple, voice, and bell—
But mirage marks the lake, dry troughs, the well ;
Great wind-worn stones and pot-sherds mark man's hand.

V. J-B.

APPENDIX A

The Western Desert in 1915–16

EXCEPTIONALLY bad climatic conditions were experienced in the Western Desert in the "war winter" of 1915–16. Black sandstorms alternated with deluges of rain, and during the sandstorms one could see no farther than three or four yards, while the railway line was blocked with sand-drifts as late as April. The railway and the road beyond were breached by rainstorms, and this added not a little to the discomfort of the winter operations.

The composition of the little "Western Frontier Force," which rolled up the Senussi and Gaafer Pasha at Agagiya [1] on 26th February 1916, was interesting owing to its very mixed details, namely :

The Dorset Yeomanry,
A squadron of the Bucks Yeomanry,
The Notts Battery, R.H.A.,
The 1st South African Infantry Brigade (less two battalions) ; and
The 1/6th Royal Scots.

Behind this force, in reserve, or on the lines of communication were :

The Hong-Kong and Singapore Mountain Battery,
The 15th Sikhs (Indian Army),

[1] Agagiya is about 14 miles S.E. of Sidi Barrani.

The 1st Battalion New Zealand Rifle Brigade and Australian Transport, etc.

The whole force was under General Peyton, and perhaps the following episode should be recorded here. Colonel Souter, of the Dorset Yeomanry, in a brilliant cavalry charge by his regiment, found himself with his horse shot under him, practically alone, face to face with the Senussi commander-in-chief, General Gaafer Pasha, and his staff. At that moment, fortunately, a machine-gun section came up, and this decided Gaafer Pasha to surrender himself with the whole of his staff to Colonel Souter. In after years Gaafer Pasha became first Prime Minister of Irak, and afterwards Irakian Minister in London and a firm friend of the Dorset Yeomanry.

Salum was recaptured on 14th March 1916, and on the following day the Light Cars, under the Duke of Westminster, made their well-known raid 75 miles into the enemy territory of Cyrenaica, to rescue the ninety-five British prisoners who had been captured after being torpedoed off the coast in H.M.S. *Tara* and H.M.T. *Moorena* in November 1915.

Although the Senussi as a fighting force had been destroyed at Agagiya, General Sir John Maxwell decided to form a cordon round the desert as there were still Senussi, armed with Italian, German, and Greek rifles, in Cyrenaica, who were expected to make raids on the Nile Valley. Up to this time, " the Oases were kept under constant observation by means of aeroplanes," wrote General Maxwell in a dispatch, dated 9th April 1916. " Very long flights were necessary and to reduce them as much as possible a system of advanced depots in the desert was started. The credit for originating this system is due to Lieut. van Ryneveld,

R.F.C., and Mr. Jennings-Bramly, of the Sudan Civil Service,[1] and was first put into practice on the occasion of the flight to Qara. . . ."

I believe it has been claimed that German intrigue among the Senussi was responsible for keeping half a million men of arms engaged in the Western Desert. This is a gross misstatement of fact. The desert inside Egyptian territory must have been practically free of the enemy after Agagiya, as it was possible for Owston and Bramly, Partridge and Williams, Dr. Ball and the rest to make innumerable journeys all over the desert and among the dunes during 1916–17.

The facts are that on 23rd April 1916, a small force consisting of the Pembroke Yeomanry and some Camel Transport Corps under Colonel Lloyd, left Alamein and occupied the Escarpment Post in order to watch the caravan routes passing through Moghara Oasis. The Wadi Natrun (Bir Hooker) and Faiyum had previously been occupied by small forces at the end of 1915. Later, rather larger forces occupied the Bahariya and Kharga Oases, but there could not have been more than thirty-five thousand employed in the great desert cordon between Salum and Aswan at any one time.[2]

Escarpment Post was subsequently occupied by the Shropshire Light Infantry in place of the Yeomanry, but this place, Daba, Bir Hooker, and the rest were finally evacuated in March 1917.

The Senussi power had gone out of Egypt—there was peace again in the land, and the Beduin were about to gather in their post-war crop of barley.

[1] Now Sir Pierre van Ryneveld, head of the South African Air Force, and Mr. Jennings-Bramly of Borg el Arab.

[2] See dispatches in the *London Gazette*, dated 20th June 1916, etc.

The following verses, written in those days by Mr. C. G. B. Marsham, have charm and describe not only Marsa Matruh as it was but other places on the seashore dear to the old Maryuti :

An azure sky—dark blue the open sea—
The waves break white against the harbour reef.
Above there floats a gossamer veil of cloud,
Its shadow drifting over sea and land ;
Alternate sun and shadow, grey and gold,
Sorrow and happiness. The tyrant sun
Not long allows his glory to be dimmed.
The distant sand-hills catch his cheerful ray,
And gleam in whiteness purer than the snow.
Here happy flowers bloom among the rocks,
Their roots deep buried in the yellow sand :
Lilies and little mauve thyme-scented things,
And fifty others, nameless, wonderful,
A fairy garden, to the breakers' edge ;
A wilderness of waters in the north,
And to the south a wilderness of sand.
The harbour is the haunt of birds—the teal,
The mallard, purple heron, and the tern,
The desolate wheatear and the crested lark ;
The creamy courser runs from dune to dune,
Or flies dark-winged along the stony waste—
A land of birds and flowers, sand and palm,
And Arab children laughing in the sun.

APPENDIX B

Gypsum Deposits at El Gharbaniyat

DR. HUME, D.Sc., F.G.S., F.R.S.E., in a paper on "The Gypsum Deposits of the Maryut Region," in vol. vi. (1912), of *The Cairo Scientific Journal*, throws light on the geological history of the Maryut when he agrees that the gypsum deposits near El Gharbaniyat (Wadi el Gyps), were deposited by evaporation from ancient lagoons in the following manner. The calcareous chain of the Gebel Maryut was formed by littoral dunes deposited during Lower Pleistocene times, and, during the marine transgression of the Middle Pleistocene, the sea invaded this area (Wadi el Gyps) behind this littoral bar, and, on its subsequent regression, the lagoon so formed precipitated its sulphate of lime (gypsum) held in solution as soon as evaporation had caused it to lose four-fifths of its volume of water.

In any case, the supragypseous bed with *Cardium edule* (common marine cockle shells) represents the dried portion of a lagoon which was formed by a Quaternary sea, at a level much higher than the present one. This is obviously subsequent to the formation of the (Gebel Maryut) ridge which separates the Wadi Gyps from the more recent one of Mallahet Maryut, and which dates from the Middle Pleistocene time.

APPENDIX C

Ancient Egyptian Place-Names in Mareotis

M. HENRI GAUTHIER, in his *Dictionnaire des noms Géographiques contenus dans les Textes Hiéroglyphiques*, 6 vols., Cairo, 1925–1931, gives many references concerning the origin of the word Marea or Mareotis (Arabic, Maryut), for example :

(*a*) Aat-Meri, " la butte du pays de Meri " (vol. i. 26).

(*b*) Amenti, the name of the IIIrd Nome of Lower Egypt situated west of the Canopic Nile, otherwise Mareotis (vol. i. 75).

(*c*) Per Mert (Pa-Merti), meaning " the country of the Lake," a district in the IIIrd Nome of Lower Egypt, sometimes known as Libya (vol. ii. 38, 88).

(*d*) Mrit=Maryut (vol. iii. 49).

(*e*) Mert, the Maryut district where Osiris was worshipped (vols. iii. 53, 54, and v. 118). Osiris was venerated in the Maryut as early as the XXVIth Dynasty (vol. i. 7), at which time the Maryut was a kingdom.

(*f*) Chi Mert=Lake Mareotis (vol. v. 118).

M. Gauthier mentions many other places in Mareotis which occur in hieroglyphic texts and inscriptions, among them :

(1) Hat Ousar, " The palace (or temple) of Osiris," in Mareotis (presumably Taposiris) (vol. iv. 60).

(2) HAT HAPI, " The palace (or temple) of Apis, a town in the Western Delta which produced wine." Daressy (*Ann. Serv. Antiq.* xvi.) identified this place with NOUT NT HAPI, the town of Apis—the APIS of Herodotus and Pliny, the TAPOSIRIS of Strabo, and the modern ABU SIR.

In my opinion the town of APIS is elsewhere in the Maryut—one of the large groups of foundations at present unidentified ; furthermore, TAPOSIRIS was dedicated to Osiris and not to Apis. J. Maspero and G. Wiet (*Matériaux Géographiques Egyptiens*, p. 161) also bear out that they were two separate places. (See Gauthier, *op. cit.* vols. iv. 109–110, and iv. 27.)

(3) NEHAM is another unidentified town once situated on Lake Mareotis, famous for the good quality of its wine (vol. iii. 97).

(4) SBA-HOR-KHONTI-PET, " l'étoile d'Horus le premier du ciel." " District renonmmé dès l'Ancien Empire pour son vin, placé par Maspéro dans la région occidentale du Delta, soit autour du lac Mariout, soit dans les collines (Koms ?) au sud de Damanhour et à l'ouest de Naucratis où, dit-il l'on rencontre encore de nombreuses traces d'une culture ancienne de la vigne " (vol. v. 20).

This place has yet to be identified, in what was once Eastern Mareotis but is now Western Behera.

(5) NCHI, " the Sands " (or dunes), were part of the IIIrd Nome, south of Mareotis, presumably (vol. iii. 105).

(6) HAT CHAT or HAT CHAOUT, was "the Fortress of the West" which had been built by Merneptah to arrest incursions of the Libyans. The Hatsho of Bates (see text, p. 32). Gardiner placed it near Lake Mareotis, perhaps too far north, according to Gauthier (vol. iv. 133).

M. Gauthier suggests that the ancient town of Marea was on an island (vols. iii. 53, 54, and v. 118), and there seems no reason why it should not have been, when the levels round the lower part of the site identified with Marea are examined. This may have been the site of the earlier Marea, girt by the water of the ancient lake.

M. Henri Munier of Cairo tells me that there was probably a bishopric of Mareotis, with the see at the later Marea, in early Christian times.

APPENDIX D

Analysis of Glass Slag from Mareotis

MR. H. N. BASSETT, Chief Chemist of the Egyptian State Railways, writes :

The glass slag which you sent down has been analysed, and gives the following results :

Silica (SiO_2)	52·08 per cent.
Lime (CaO)	15·87 ,,
Alumina (Al_2O_3)	11·75 ,,
Iron oxide (Fe_2O_3)	9·54 ,,
Magnesia (MgO)	2·97 ,,
Titanium oxide (TiO_2)	2·21 ,,
Soda (Na_2O)	2·13 ,,
Potash (K_2O)	1·70 ,,
Manganese oxide	Trace (0·01) ,,
Loss on ignition	0·16 ,,
	98·42 per cent.

The remainder is probably sulphur trioxide (SO_3) with which some of the bases were combined, doubtless.

I have not been able to trace any previously published analyses of a glass slag as old as this, though there are a number of analyses of *glass* in Lucas's book, *Ancient Egyptian Materials*, and I much appreciate the opportunity you have given me of making this one.

APPENDIX E

Note on the Wild Flowers of Maryut
By F. W. Oliver, F.R.S.

IN a general way the flowering season of Maryut plants extends from January to March, and this season falls roughly into three periods—an early, middle, and late.

The Early Period includes among its conspicuous members *Narcissus Tazetta* (in the hollows), *Arisarum vulgare* (everywhere in the cultivation and on quarry bottoms), *Anemone coronaria* (in the cultivation), *Globularia arabica* (in rock crevices) and (everywhere) *Asphodelus microcarpus*.

The Anemone occurs in several colour forms; commonly the rarer variants will be found in clusters, in which they have spread vegetatively from their original units.

The Middle Period includes the annuals, most of the bulbous plants, and indeed the rank and file of the flora, with such conspicuous plants as *Ranunculus asiaticus*, Leguminosæ, Boraginaceæ, Umbelliferæ, *Convolvulus althæoides*, and the *Cruciferæ*.

The Late Period is characterised especially by Compositæ, Labiatæ (*e.g.* Phlomis), and a number of halophytes belonging to Chenopodiaceæ (*e.g. Suæda fruticosa*, *Anabasis articulata*, *Halocnemum strobilaceum*); Frankeniaceæ (*Frankenia pulverulenta*); Plumbaginaceæ (*Statice tubiflora*, *Statice thouinii*, *Limoniastrum monopetalum*), together with

Peganum Hamala (Zygophyllaceæ) and *Mesembryanthemum crystallinum*. By May most of the plants are in seed and the ground reverts to a desert condition till aroused once more by the rains of winter.

Of the 400 species comprised in the Maryut flora there are 54 Composites, 50 Leguminosæ, 47 Gramineæ, and 22 Chenopods.

The display of the flora owes a great deal to the barley cultivations of the Beduins, which, by disturbing the surface layers of the soil, tend to spread the perennials by vegetative means as well as to scatter the seed. The green barley fields also make an effective background to the colour mosaic. In effect, the Beduins, in addition to barley, are cultivating a considerable selection of the Maryut flora. Without their efforts the plants would be there, but in nothing like the density in which they at present occur.

Here follows a list of about ninety of the more conspicuous members of this flora. The Natural Orders (Families) are arranged alphabetically under their classes.

Gymnosperms

Ephedra alte (sides of quarries).

Monocotyledons

Amaryllidaceæ—

Narcissus Tazetta.
Pancratium maritimum.

Aroideæ—

Arisarum vulgare.
Helicophyllum crassipes.

Cyperaceæ—

Cyperus capitata.

Gramineæ—

Avena sterilis.
Bromus rubens.
Calamogrostis arenaria v. australis.
Lamarckia aurea.
Lygeum spartium.
Sphenopus divaricatus.

Iridaceæ—

Iris sisyrhynchium.

Juncaceæ—

Juncus acutus.

Liliaceæ—

Allium roseum.
Asphodelus microcarpus.
Hyacinthus sessiliflorus.
Muscari comosum.
Ornithogalum tenuifolium v. trichophyllum.
Scilla peruviana.

Potamogetonaceæ—

Posidonia oceanica (washed up in fibre-balls on the beach.)

Dicotyledons

Aizoaceæ—

Mesembryanthemum crystallinum.
Mesembryanthemum nodiflorum.

Boraginaceæ—

Alkanna tinctoria.
Echium sericeum.

Caryophyllaceæ—

Gymnocarpus decander.
Silene succulenta.
Spergularia diandra.

Chenopodiaceæ—

Anabasis articulata.
Halocnemum strobilaceum.
Suæda fruticosa.

Cistaceæ—

Helianthemum ciliatus (rose).

Compositæ—

Achillea santolina.
Anacyclus alexandrinus.
Calendula.
Centaurea.
Chrysanthemum coronaria.
Crepis.
Helichrysum siculum.
Launea.
Odontospermum pygmæum.
Onopordon sibthorpianum.
Phagnalon rupestre.
Scorzonera alexandrina.

Convolvulaceæ—

Convolvulus althæoides.
Cressa cretica.
Cuscuta arabica.

Cruciferæ—

Biscuitella didyma.
Cakile maritima.
Carrichtera annua.
Enarthrocarpus pterocarpus.
Matthiola humilis.

Frankeniaceæ—

Frankenia pulverulenta.

Geraniaceæ—

Erodium hirtum.

Globulariaceæ—

Globularia arabica.

Labiatæ—

Marrubium alyssum.
Phlomis floccosa.
Salvia lanigera.
Teucrium pollum.
Thymus capitatus.

Leguminosæ—

Astragalus alexandrinus.
Hippocrepis bicontorta.
Lathyrus amosnus.
Lotus argenteus.
Medicago granatensis.
Ononis vaginalis.
Retama retam.
Scorpiurus muricatus.
Trifolium tomentosum.
Trigonella stellata.
Vicia calcarata.

Papaveraceæ—

Hypecoum parviflorum.
Papaver hybridus.

Paronychiaceæ—

Paronychia argentea.

Plantaginaceæ—

Plantago.

Plumbaginaceæ—

Limoniastrum monopetalum.
Statice thouinii (white and pale blue).
Statice tubiflora (rose).

Ranunculaceæ—

Adonis microcarpus.
Anemone coronaria.
Ranunculus asiaticus.

Rubiaceæ—

Crucianella herbacea.

Thymelaceæ—

Thymelaea hirsuta.

Umbelliferæ—

Bupleurum semicompositum.
Eryngium campestre.
Malabaila pumila.
Pithyranthus tortuosus.

Zygophyllaceæ—

Fagonia cretica.
Peganum Hamala.

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