

REPORT AND COMMUNICATIONS.

REPORT

PRESENTED TO THE

Cambridge Antiquarian Society,

AT ITS FORTY-SIXTH ANNUAL GENERAL MEETING,

MAY 24, 1886,

WITH AN ABSTRACT OF THE PROCEEDINGS OF THE SOCIETY,
1885—1886.

ALSO

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WITH APPENDIX.



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VI. THE LAKE OF MÆRIS AND THE PATRIARCH
JOSEPH. Communicated by F. COPE WHITEHOUSE,
Esq.

[November 30, 1885.]

SIXTY-TWO miles above Memphis, or seventy-seven miles from where the Nile divides into the different channels forming the Delta, a lake, according to Pliny¹, had been formed by artificial means, which was described by the distinguished Mutianus as 450 miles in circumference and 50 paces deep. If, as the Roman historian seems to imply, its circuit had been diminished in his own day, it was still an immense artificial piece of water, cited by the Egyptians among their wondrous and memorable works, containing, indeed, two pyramids of conspicuous dimensions². Strabo standing upon the roof of the Labyrinth noted that its borders resembled a sea beach, following the sinuosities of a coast and subject also to an annual tide of at least twenty feet. This sagacious and accurate traveller describes Egypt as having attained, in his time, the highest conceivable development. The attention and care bestowed upon the Nile was so great that industry had triumphed over nature. By nature a greater rise of the river irrigated a larger tract of land; but industry had completely succeeded in rectifying the deficiency of nature, so that in seasons when the rise of the river had been less than usual, as large a portion of the Delta was irrigated by means of canals and embankments, as

¹ A. D. 47; *Nat. Hist.* v. 9.

² *ib.* xxxvi. 16.

in seasons when the rise of the river was greater. The country above the Delta was irrigated in the same manner, except where the Nile was diverted by a canal into a large lake or a tract of country which it irrigated, as the Lake Mœris and the Arsinoïte nome, or where the canals discharged themselves into Lake Mareotis at Alexandria. The irrigation of lower Egypt was controlled by a reservoir which, in extent a sea, and in the colour of its waters resembling the sea, was by its magnitude and depth able to sustain the superabundance of water which flowed into it at the time of the rise of the river so as to prevent the flooding of the raised inhabited parts, and the tracts devoted to the cultivation of trees. On the subsidence of the inundation the excess was discharged into the river by the canal at its two mouths, but a supply was retained in both the lake and canal for irrigation. In addition to the natural and independent properties of the lake, as a backwater for the Nile, there were on both mouths of the canal locks by which the engineers stored up and distributed the water which entered or issued from the canal¹. Diodorus had given additional particulars of interest. Meris (sic) was a monarch who built a Pylon in Memphis towards the north, more stately and magnificent than any other entrance to that ancient fortress. He cut a channel for a lake, bringing it down in length from the city 325 furlongs, whose use was admirable, and the greatness of the work incredible. The Egyptians said that it was in circuit 3,600 furlongs, and in the majority of places 300 feet in depth. Who is he, exclaimed the Sicilian geographer, that considers the greatness of this work, that may not justly ask the question—What myriads of men were employed, and how many years spent in finishing it? Considering the benefit and advantage brought by this great work to the government, none ever could sufficiently extol it, according to what the truth of the thing deserved. In words

¹ Strabo xvii. 1.

similar to those employed by the Pontic Greek, he recounts its usefulness and object, adding that the barrages and cleaning of the sluices cost 50 talents annually. This lake, he said, continues to the benefit of the Egyptians for these purposes to our very days, and is called the Lake of Myris or Meris to this day. In earlier times the queen received as a royal perquisite a talent of silver daily from the fisheries. Multitudes of people were engaged in curing twenty-two sorts of fish, and were hardly able to salt up the vast number caught. Thus in the full light of history, at the commencement of our era, with greater facility for travel and study than any period has afforded down to our own time, three men, a Roman admiral, a gentleman of high birth and extreme accuracy well received in the political world, and a geographer from the important port of Syracuse, pledged their reputations to support the assertion that the marvel of the age was to be found in Egypt, but not on the banks of the Nile, and due to a monarch whose splendid bid for immortality rested upon the benefits which for about two thousand years had been conferred by his agency.

In order to establish a scale by which to estimate this engineering triumph recourse was had by the same writers to works which still remain. It now stands on record that "in the pyramids of Gizeh one may fully realize a result that human labour has not achieved elsewhere; and, that no monuments of man's raising elsewhere afford any scale by which to estimate the greatness of the Pyramid of Cheops." (*Encyc. Brit.* "Egypt.") Repulsive as may be the thought, if this remains uncontradicted and uncorrected for another forty years, the future historian will point to English literature in the nineteenth century as a proof of our incapacity to judge the achievements of the human race with the sober common sense of Herodotus. The Egyptians told him that the first man who ruled over Egypt was Mên, and that in his time all Egypt, except the Thebaic canton, was a marsh, none of the land below

Lake Mœris then showing itself above the surface of the water. This is, he added from his own observation, a distance of seven days' sail from the sea up the river. (Herodotus, Book II. c. 4.) In a later chapter he repeats that the priests said that Mên was the first king of Egypt, and that it was he who raised the dyke which protected Memphis from the inundation of the Nilé. Before his time the river flowed entirely along the sandy range of hills which skirts Egypt on the Libyan or Western side. The hills on the east are precipitous rock. Mên, however, by banking up the river at the bend which it thus formed about a hundred furlongs south of Memphis, laid the ancient channel dry, while he dug a new course for the stream halfway between the two lines of hills. To this day, wrote the Ionian, the elbow which the Nile forms at the point where it is forced aside into the new channel is guarded with the greatest care by the Persians, and strengthened every year; for if the river were to break out at this place and pour over the mound there would be danger of Memphis being completely overwhelmed by the flood. Here at all events no one will question his accuracy. Where is Memphis? Mên, the first king, having thus, by turning the river, made the tract where it used to run, dry land, proceeded in the first place to build the city now called Memphis, which lies in the narrow part of Egypt; after which he excavated a lake outside the town, to the north and west, communicating with the river which was itself the eastern boundary. Probably the excavation which was a needful adjunct to the metropolis was also the quarry for the material used in the embankment which gave to Memphis its names Men-Nofer, the good abiding place, and Anbu-Hat, the White wall¹. "While the other kings, said the Egyptians, were personages of no note or distinction, and left no monuments of any account, Mœris left several memorials of his reign;—the lake excavated by his orders, whose dimensions I shall give

¹ Herod. II. 99, 100, 101.

presently, and the pyramids built by him in the lake, the size of which will be stated when I describe the lake itself wherein they stand."

In the description of these works Herodotus stated that: "I have the authority not of the Egyptians only, but of others also who agree with them. I shall speak likewise in part from my own observation." For the history he was indebted to the natives; for the visible objects he made himself responsible. He then recounts his visit to the Labyrinth, which he found to surpass description. "For if all the walls and other great works of the Greeks could be put together in one, they would not equal, either for labour or expense, this Labyrinth; and yet the temple of Ephesus is a building worthy of note and so is the temple of Samos. The pyramids likewise exceed description and are severally equal to a number of the greatest works of the Greeks, but the Labyrinth surpasses the pyramids. The upper chambers I myself passed through and saw; of the underground chambers I can speak only from report, for the keepers of the building could not be got to show them, since they contained (as they said) the sepulchres of the kings who built the Labyrinth and also those of the sacred crocodiles. The upper chambers, however, I saw with my own eyes and found them to excel all other human productions." With what striking candour the traveller acknowledges that his desire to enter the lower part of this mysterious and splendid edifice remained ungratified! How wisely also he prefaces his high estimate of its importance by citing the opinion of his predecessors, and the common consent of the scientific world of his day! The Egyptians considered it superior to the monuments of the Nile Valley. Those monuments ranked above all the works of the great age of Greek religious architecture. It was of remote antiquity and strange plan. Its devious passages were foreign to the rectangular structures of the Egyptians. It had been built, it was said, shortly after an

uprising against a hierarchy, but, as one might assume, on lines which were those of the priestly caste which had been expelled. The renaissance of a Reformation had not yet supplanted the Gothic curves. Yet from 1854 to 1882 this description served as a standard to measure the mendacious ignorance of the Greek writer. For Dr Lepsius, having assured the world that the miserable mud-brick walls of the Greco-Roman necropolis of Arsinoe were the remains of the Labyrinth, insisted that they gave a measure of value for the intelligence of not only Herodotus, but Diodorus, Strabo, Pliny and all who preceded or followed them from Hecateus to Stephen of Byzantium. But the pyramids of Gizeh are an indisputable monument of how grandiose ideas had assumed permanent form at the hands of some race in Egypt, a thousand years before the visit of Herodotus. "Wonderful as is the Labyrinth, the work called the Lake of Mœris, which is close by the Labyrinth, is yet more astonishing. The measure of its circumference is sixty schoenes, or 3,600 furlongs, which is equal to the entire length of Egypt along the sea-coast. The lake stretches in its longest direction from north to south, and in its deepest part is of the depth of fifty fathoms. It is manifestly an artificial excavation, for nearly in the centre there stand two pyramids, rising to the height of fifty fathoms above the surface of the water and extending as far beneath; against (not on) each of them is a colossal statue sitting upon a throne. Thus these pyramids are one hundred fathoms high, which is exactly a furlong (stadium) of six hundred feet: the fathom being six feet in length, or four cubits, which is the same thing, since a cubit measures six, and a foot four palms." The pyramids of Gizeh rise six hundred feet above the Nile. The pyramids of Mœris were of equal height above the bed of the lake. If pyramidal, how could they be crowned each with a statue? How too would the sitting figure serve to give an exact measure of height, and how could such mon-

astrous violations of æsthetic propriety have been executed? No colossal (presumably monolithic) statue could have been raised over five hundred feet above the ground or two hundred feet above the water! Herodotus and the later writers were wrong in their inference that this lake was an excavation. Diodorus says that these two pyramids and a sepulchre were constructed on a natural island. The hollow was an erosion or depression, similar to the parallel basin of the Gulf of Suez and of the same depth below the Mediterranean. Whether it had been eroded (*ὄρυχθῆναι*) by the Nile when the stream flowed freely in and out of the basin, and a large amount of friable rock had been swept away, or the Egyptians had quarried a certain amount of rock and referred to their own labour, it is obvious, that the Greek and Roman historians were misled by a pure assumption which in no respects affects their integrity or competence as witnesses to fact. They looked across a surface of comparatively shallow water but a few feet deeper than the Nile. But under the western hills of the desert, the plummet sank into a deep basin of fifty fathoms, which they saw indicated above them by the height of the artificial remnants of the pyramid island. It seems scarcely credible that these circumstantial accounts should have been rejected in their entirety. In 1881, the world of letters had accepted the position thus stated by Dr Brugsch. "The great attention which king Amenemhat III. bestowed upon the question of the rise of the Nile will be best proved by noticing the enormous basin which he caused to be dug by the hands of men in the modern province of the Fayoum for the reception and storage of the superfluous water of the inundation. This lake, so rich in fish, was protected by artistic dams on all sides, and had a communication with the river by a tunnel for water, and locks which were constructed for the influx or the complete shutting off of the water. For a long time it was supposed that this basin was the same as the Birket-el-Keroon, a great natural lake to the West of the

Fayoum, until by his researches, M. Linant-Bey proved that the ancient lake Mœris was situated in the south-east part of the province of the Fayoum, where the depression of the ground and the ancient dykes exactly describe its site. At the epoch of the inundation the waters of the river entered by means of a canal into the lake, where locks retained them. At the time of the low waters, the gates were opened to irrigate the great plains of the districts in the neighbourhood of the lake." (Brugsch's *Hist. of Eg.* i. p. 167, 1879.) This may be found with variations of phraseology in all the standard works on Egypt. The area is indicated under the name of Mœris on the official maps of the Egyptian and English War Offices, as well as on the later maps which are not reprints of those published prior to 1840. The map and section given by Dr Lepsius in the *Denkmäler aus Ägypten*, 1859, and the original map of M. Linant-Bey show that he substituted for the vast inland sea of the ancients a shallow reservoir, less than one-tenth of its circuit and depth. Considering this a fatal blow to the integrity of all the ancient records I determined to test the value of his observations. It was easy to indicate inherent error. It was easy also to prove that a lake might be formed with a surface of two thousand square miles by filling the Fayoum, when its greatest depth would be about fifty fathoms. It was necessary, however, to show that in the time of Herodotus, the lake extended much farther to the South. It was also desirable to include in some way the text of Claudius Ptolemy, and if possible verify my conjecture that the mediæval draughtsman had worked from maps of early date. Such a map had been seen by Masūdi (A.D. 958). The Mt. Athos MS. still retained an imperfect representation of a reservoir in the desert with its centre forty miles south of the centre of the Fayoum. The map of the French expedition shows a vast and monotonous table land broken only by a single "*butte pyramidale nommée Heram.*" There could be no *butte* in stratified limestone where

there was not also a depression or erosion. On March 2nd, 1882, I visited this "Haram," which I found in a valley beyond the Western limit of the Fayoum basin, known as the Wadi Reian. It was erroneously said to be pyramidal in shape, but called a "pyramid" (*haram*) by the Arabs. It was at a point near the middle of the Mæris Basin according to Claudius Ptolemy, and where the greatest depth might be anticipated beneath "montagnes à pic" similar to those which rose above the western shore of the Birket el-Qerûn. These considerations should have induced the cartographers and the Egyptologists to retain the outline of a southern basin similar to that marked "Meridis lacus" on those Ptolemaic manuscripts where Lakes Mareotis and Sirbonis are not represented conventionally. In April 1882 I crossed the ridge to the S.-W. of the Gharaq basin, accompanied by an English engineer specially qualified for the task, provided with a theodolite and aneroid barometer. He is responsible for the map (exhibited) which shows a depth of not less than 250 feet below the level of the Nile. About the same time, Dr Schweinfurth told me that Dr Ascherson had traversed this part of the valley with the following results: Beni-Suef +91 feet, Medinet el-Fayoum +75 feet, the town at Gharaq +6.5 feet, and the Wadi Reian at the edge of the desert plateau -95 feet (*Zeit. Ges. f. Erd.* 1880, p. 160). This difference of 186 feet between high Nile at Beni-Suef and the dry bed of the Wadi Reian was not a maximum. Dr Ascherson had no interest, as I had, in finding the lowest place, but would rather have avoided any unnecessary descent. My engineer had no suspicion of these independent observations, made eleven years previously, until after his own report was in my hands. In the May number (116) of the *Zeitschrift der Gesellschaft für Erdkunde* (Berlin), 1885, Dr Kiepert has given a map draughted from the observations made by Dr Ascherson, including those communicated by me.

In 1883 I spent two months in the Gharaq desert in the Fayoum, near Qasr Qeroun, and on the Bahr Jūsuf and contiguous Bedouin pasturages, but I was not able to induce either the Arab or European engineers, detailed to assist me, to accompany me to the points which I had reached when alone, to seek for the colossal statues at the Haram, or follow the beaches plainly visible in a photograph (exhibited) near the hill "Musquiqeh" (see Map, *R. Geog. Soc. Bull.* Nov. 1885). Dr Schweinfurth was similarly unable to induce his strong escort of experienced Bedouins to follow him to the South-west of Qasr Querūn. The Eastern end of this basin seems to approach to within about fifteen miles of Behnesa. The map of Dr Ascherson shows that we only know it, in modern times, from the report of the Bedouins. But a hieroglyphic inscription is given by Dr Brugsch (*Dict. Geog.* pp. 1188—1191), which describes a canal of 40 cubits, serving to conduct the inundation into "the lake of the West" at a point near Behnesa. This town of the Phoenix (or Phoenicians, see Lieblein, *Proc. Soc. Bib. Arch.* June, 1882), would be fitly represented by the mythical bird, if the waters followed a subterranean channel similar to those which "run among the hills" of Syria to gush out in a fountain as at Barada, or the source of the Jordan, or the Ain es-Sultana of Jericho. "I have seen," says Masūdi (chap. ix. p. 204), "in the Geography (of Ptolemy) a map representing the twelve sources of the Nile, filling two lakes," and this map, strange as it may seem, remains the only source of information for the valley with which I have ventured to complete that of the Berlin Geographical Society. It was good authority in the nineteenth century, as it was in the tenth, for the two lakes of Nyanza. It may prove correct here.

Masūdi, who died in A.D. 958, describes the state of Egypt as far inferior in his time to the antecedent period when with "dykes, bridges and canals in excellent working order the whole of Egypt, with its cultivated lands and pasturages was irrigated

even by the scant rise of sixteen cubits. These canals were seven in number: The canals of Alexandria, Sakha, Damietta, Memphis, and those of the Fayoum, Serdous and el-Menhi. According to the accounts of the learned, Egypt was at that time, beyond any other country, covered with gardens. They succeeded one another without interruption on both sides of the Nile from Houlwan to Rosetta. When the inundation had attained nine cubits, it filled the canals of el-Menhi, of the Fayoum, of Serdous and Sakha. As for the canals of the Fayoum and of el-Menhi they were excavated by Joseph, son of Jacob, under the following circumstances: Raian ibn-Walid (الريان بن الوليد), king of Egypt, satisfied with the interpretation of the kine and sheaves seen by him in his dream, associated Joseph with him in his government. This Allah himself teaches us, when he puts in the mouth of the prophet Joseph these words: 'Trust to me the store houses of this land, for I am a prudent steward' (Koran xii. 55.)" This citation from the Golden Fields (chap. xxxi.) of Masūdi (ca. A.D. 950) is sufficient to show the error of the assertion made by every modern writer that the Bahr Jūsuf, the canal of el-Fayoum, owes its name to Saladin who built the citadel of Cairo in A.D. 1166. This canal, which is in fact the oldest and most important artificial water-course in the world, was known to Herodotus as the canal of Mên. It has supplied the Fayoum with water since the foundation of the Labyrinth not less than 4,000 years ago. Many other Arabic historians give a more or less extended account of the manner in which Joseph was led to undertake the vast work. In the "Wonders of Egypt" by Murtadi there are several versions. The most interesting, perhaps, is that given on the authority of a certain Hassam ibn-Isaac. "When Joseph, to whom may Allah show mercy and grant peace, was master of Egypt and high in favour with Raian his sovereign, after that he was more than a hundred years old was the object of envy on the part of the favorites of

the king and the puissant seigneurs of the court of Memphis, on account of the great power which he wielded and the affection entertained for him by his monarch. They accordingly thus addressed the king. 'Great King, Joseph is now very old; his knowledge has diminished; his beauty has faded; his judgment is unsound; his sagacity has failed.' The king said: 'Set him a task which shall serve as a test.' At that time Alphiom was called el-Hun, or the Marsh. It served as a waste basin for the waters of Upper Egypt, which flowed in and out unrestrained. The courtiers, having taken counsel together what to propose to the king, gave this reply to Pharaoh: 'Lay the royal commands upon Joseph that he shall divert the water of the Nile from el-Hun, and drain it so as to give you a new Province and an additional source of revenue.' Thereupon the king summoned Joseph and said: 'You know the high esteem in which I hold my daughter and you see that the time has arrived in which I ought to carve an estate for her out of the crown lands, and give her a separate establishment, of which she would be the mistress. I have, however, no territory available for this purpose except el-Hun. It is in many respects favorably situated. It is at a convenient distance from the Capital. It is surrounded by desert. My daughter will thus be independent and protected.'" Here Murtadi cites from another author who says that the Fayoum is in the middle of Egypt, as Egypt itself is in the middle of the earth, because it cannot be approached without traversing tracts of dangerous desert. "'Quite true, great King,' answered Joseph, 'when would you wish it done? for accomplished it shall be by the aid of the All-Powerful.' 'The sooner the better,' said the king. Then Allah inspired Joseph with a plan. He directed him to make three canals; one, from Upper Egypt; a canal on the East; and a canal on the West. Joseph collected workmen and dug the canal of Menhi from Ashmūnin to el-Lahūn. Then he excavated the canal of Alphiom, and the Eastern canal

with another canal near it called Benhamet, beyond the inhabited parts of Alphiom, from the desert of Benhamet to the West. In this way the water was drained from [the upper plateau of] el-Hun. Then he set an army of laborers at work. They cut down the tamarisks and bushes which grew there, and carried them away. At the season when the Nile begins to rise the Marsh had been converted into good cultivable land. The Nile rose. The water entered the mouth of the Menhi canal and flowed [down the Nile Valley] to el-Lahun. Thence it turned towards Alphiom and entered its canal in such volume that it filled it and made it a region irrigated by the Nile." I have retained the form Alphiom instead of el-Fayoum, to explain a fanciful etymology of the name which has, nevertheless, a special interest. "King Raian came to see his new Province with the courtiers who had advised him to set Joseph this task. When they saw the result they marvelled at the skill and inventive genius of Joseph, and exclaimed: 'We do not know which most to admire, the draining of the Marsh, and the destruction of the noxious plants, or the conversion of its surface into fertile and well-watered fields.' Then the king said to Joseph: 'How long did it take you to bring this district into the excellent state in which I find it?' 'Seventy days,' responded Joseph. Pharaoh thereupon turned to his courtiers and said: 'Apparently one could not have done it in a thousand days (*alph-iom*)'. This remark of the king led to its being called Alphiom, or the land of the thousand days, and that very year it was sown and cultivated like other parts of Egypt."

It was further narrated by Hassam that Joseph having thus regained his hold upon the king, and won the confidence of his courtiers, whose pardon he solicited from Pharaoh, said: "You have not yet seen all that my skill and energy can accomplish. I shall put in the Fayoum a family from every district in Egypt and cause each to build a town. So there will be as many towns in the Fayoum as there are districts in Egypt. Then I

will supply each town with water in proper quantity. I will conduct it by an aqueduct at the time when the water can only reach the town under ground. I will make the conduits on different levels according as the towns are higher or lower, and regulate the flow by the seasons and the hours of day and night. I will measure the quantity of water so that it shall be equitably allotted." Pharaoh replied: "That is the work of God." Then Joseph commenced to construct the towns. The first was called Betian. Here the daughter of Pharaoh lived. Then he made canals and dykes, apportioned the land and water and thus gave rise to geometry, up to that time unknown in Egypt. For they simply followed Joseph, and this is one of the things which he was taught by Allah. It is said also that he was the first to construct a Nilometer and measure the inundation.

The king Menes, Mœris, Myris or Mēris of the Greeks, is thus identified with the patriarch Joseph. It will be observed, however, that greater stress is laid upon the creation of the fertile district of the Fayoum and less is said of the lake. There is also nothing here which corresponds to the story of countless thousands of labourers employed in excavating the basin. The Arabic historian is right. The work was the result of engineering skill and did not require the fabulous expenditure of time and toil to which the Greeks attached so much importance. At the time (1881) when I read these Oriental accounts there was no possible explanation of the western canal. The modern maps were at fault. The maps of the Ptolemaic manuscripts give this Wadi Reian in its proper place in the desert to the south. We are not therefore in the dilemma of Diodorus. The utility of Lake Mœris fully deserved his commendation, while the simplicity of the means in no respect detracts from the splendor of the achievement. It is also plain that we have here a clue to that story which every reader of Herodotus has hitherto wished might have been omitted. The daughter of Cheops is the daughter of Pharaoh. The papyrus of the

Museum of Boulaq represents Mœris as a noble female with the ornaments and dress of the daughter of a king. One can readily surmise that the evil mind of the informant of Herodotus, rightly connecting the construction of the Pyramids with the revenues derived from Mœris, had concocted the foul tale which the Ionian did not venture to suppress.

The Latin hymnologists have accustomed us to associate Mariam, Maria or Mary with the bitterness of maternal grief. When one considers the widespread use of the name it seems more probable to derive it from that word, which is English as well as Egyptian, and find in it allusion to the beauty and fruitfulness of the "Meres" or pools of the East.

On the first of August (1885) the Council of Notables of Egypt held a session. The business before it was the consideration of a Minute addressed to it by Col. Scott Moncrieff, Under Secretary of State. In it he said: "Il n'y a pas en Egypte un champ d'études plus intéressant que la province du Fayoum. J'espère, en outre, que ces études amèneront la solution du problème de la situation exacte de l'ancien lac Mœris. Une somme de £100,000 est jugée nécessaire pour ces travaux" (§ IX). On the "Carte Hydrographique de la moyenne Egypte," by M. Linant de Bellefonds (Paris, 1854), one may read the vain assertion "Le Mémoire publié par M. Linant sur le lac Mœris, donne tous les éclaircissements désirables sur ce point de l'histoire ancienne de l'Egypte." It is a warning to those who have challenged antiquity with undue precipitation. There are innumerable questions which the skill and experience of Col. Scott Moncrieff will enable him to solve. A thorough survey of the entire coast line of 450 miles, the canals which I found in the desert, and the channel which is to be sought at Behnesa are studies which will be watched with the keenest interest by the world. In the same session Abd-el-Rahman pasha Roudy said: "L'histoire nous apprend qu'un grand bassin où étaient emmagasinées les eaux pendant la crue du Nil existait autrefois

dans la province du Fayoum, et qu'à l'époque de l'étiage les eaux de ce bassin étaient rendues aux irrigations. C'est de ce réservoir dont M. Moncrieff parle dans le neuvième paragraphe de sa Note, et dont il espère pouvoir déterminer exactement l'emplacement. M. Moncrieff est également d'avis que de grands bénéfices résulteront à l'Egypte de ses recherches à cet égard." Ahmed Bey El-Sabahi employed almost the very words of Strabo when he added: "Personne n'ignore que l'irrigation constitue pour le pays l'unique source de prospérité." But not only did the ancient historians fail to teach these important facts to the modern student, but they were pilloried for their pains. It was left for me to stand alone in the desert, and in the market-place, in 1882, crying: "Si le gouvernement égyptien examine cette partie de la dépression et constate les observations que j'ai faites la question sera pour toujours résolue; mais l'emplacement du lac immense de l'antiquité ne sera dans aucun cas celui du réservoir de M. Linant de Bellefonds Pacha" (*Revue Archéologique*, Paris, June, 1882).

The advantages to be derived from Lake Mœris are too obvious not to ensure hearty support for any scheme, however magnificent in its proportions, which may commend itself to the present enlightened administration of Egypt. The danger of an excessive rise of the Nile will be averted. The marshes of the Fayoum will be reclaimed. The Wadi Raian will be filled to the brim at each recurring inundation. Fertilizing streams will once more run in the north-eastern Delta towards the long-lost Pelusiatic mouth. In A.D. 872, according to Masūdi, Ahmed ibn-Touloun heard from an aged Copt how the salt marshes of Bourlos and Menzaleh were once a vast territory, the best in Egypt, the most uniform and fertile. It was covered with gardens, palmgroves, vineyards, and plantations of trees. Nothing could compare with the beauty of this region. The only province which resembled it was the Fayoum, and it was even superior to the Fayoum in the wealth of its inhabitants,

in the abundance of its crops and the variety of its productions. Irrigation continued without interruption in summer and winter, and the orchards and fields were watered at the pleasure of its inhabitants, while the excess at high Nile passed off to the Mediterranean. This province became a salt lake and brackish fen about a century before the Muhammedan conquest. A petty prince, living at Farama, attacked the shêkh of Beliana. Each, in turn, cut the dykes between the river and the sea. The Nile, quitting its proper channels, gradually flooded the country.

The student of ancient history therefore must place upon the map of Egypt two basins. The northern must be conceived as having been at first a lake and marsh serving as a back-water for the Nile, while the southern was dry. Engineers, of an alien race, then conceived the idea of diverting the flood water of the Nile into the dry Wadi to the south-west. Evaporation speedily dried the Fayoum, and a system of canals converted it into a fertile province. In the meantime the other basin was gradually filling, and when full varied with the Nile and became a vast reservoir. The great bulk of the lake lay below low Nile, and was valuable only for its fisheries. The upper stratum of several hundred square miles in surface and about twenty feet in depth was annually renewed. Its volume was sufficient to receive the superabundant water of high Nile and to confer upon Middle Egypt and the Delta the benefits ascribed to Lake Mœris. If the Fayoum was fully redeemed fifteen centuries before our era, it had its vicissitudes, and at some later period, by neglect or by the yielding of the dyke, was filled to a depth of over one hundred feet above the present surface of the Birket el-Qeroun. The Egyptian temples, of uncertain date, in the desert on the north, stand on a well-defined shore. The Arsinoïte nome was carefully cultivated throughout its entire extent in the second century. The southern basin participated in the decay of public works at the

decline and fall of the Roman Empire. Its canal was choked. When the annual supply was arrested it would scarcely require a century to evaporate even its fifty fathoms of water. In 1881 no one conceded its existence. The name lingered about the tiny spring which furnished brackish water to the four European travellers who passed it on their way to the little Oasis. Now no one doubts that there is a depression which seems to satisfy all necessary conditions. The restoration of the lake is under consideration. A reservoir of fresh water three hundred feet deep and sixty miles long, blue in colour, surrounded by the desert, with the ruins of a town upon it corresponding to Dionysias, whose latitude and longitude were officially determined by the Alexandrine astronomers, would be formed in a few years by a short canal, three hundred feet in width, connecting the Wadi Raian with the Nile. The cardinal facts are fully established. It remains for the engineers to work out a plan by which the depression may be most advantageously utilized. The student will also find abundant occupation in tracing the influence of Lake Mœris in history and science, in literature and religion.